MANAGEMENT PLAN

FOR

REGIONAL MUNICIPALITY OF

OTTAWA-CARLETON FOREST

MANAGEMENT UNIT

OTTAWA DISTRICT

April 1, 1975 to March 31, 1995

PART I: THE REPORT

A. GENERAL DESCRIPTION

B. OUTLINE FOR MANAGEMENT

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1 Agreements

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1B Agreement between the Minister of the Ministry of Natural Resources and the Regional Municipality of Ottawa-Carleton, July 1973.

1C Transfer of the Township of Marlborough Forest to the Regional Municipality of Ottawa-Carleton, October 1, 1973.
-Annual Report of Marlborough Township Forest 1973-4.
-Forest Operations Marlborough Township Forest 1953-1974.

2 Ottawa District Organization Chart, 1975.

3 Agreement between the ARDA Directorate and Carleton County 1967.

4 Procedures for property acquisition January 19, 1973.

5 Regional Municipality of Ottawa-Carleton official plan, June 1974.
Part 5 - Natural Resources and Environmental Management.

6 Geological interpretation of Marlborough Township, 1975 by M. Klugman, Regional Geologist.

7 Wildlife Data

7A Marlborough Township Wildlife Survey, 1974, by Glenn Warren; Forest Technician.

7B Beaver Management Program for Marlborough Township by: Gordon Shearer; Conservation Officer.

7C Management of Northern Forest Habitats for ruffed grouse by: Gordon W. Gullion.

8 Ontario Ministry of Natural Resources road construction standards.

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Operational Maps - Scale 1" = 10 chains

A. GENERAL DESCRIPTION

1. LOCATION AREA AND STATUS

The Regional Municipality of Ottawa-Carleton Forest, herein referred to as the Ottawa-Carleton Forest is located in the Township of Rideau, (Marlborough Township) Regional Municipality of Ottawa-Carleton. It is composed of 4090 acres acquired from 1964 to 1973 (Table 1).

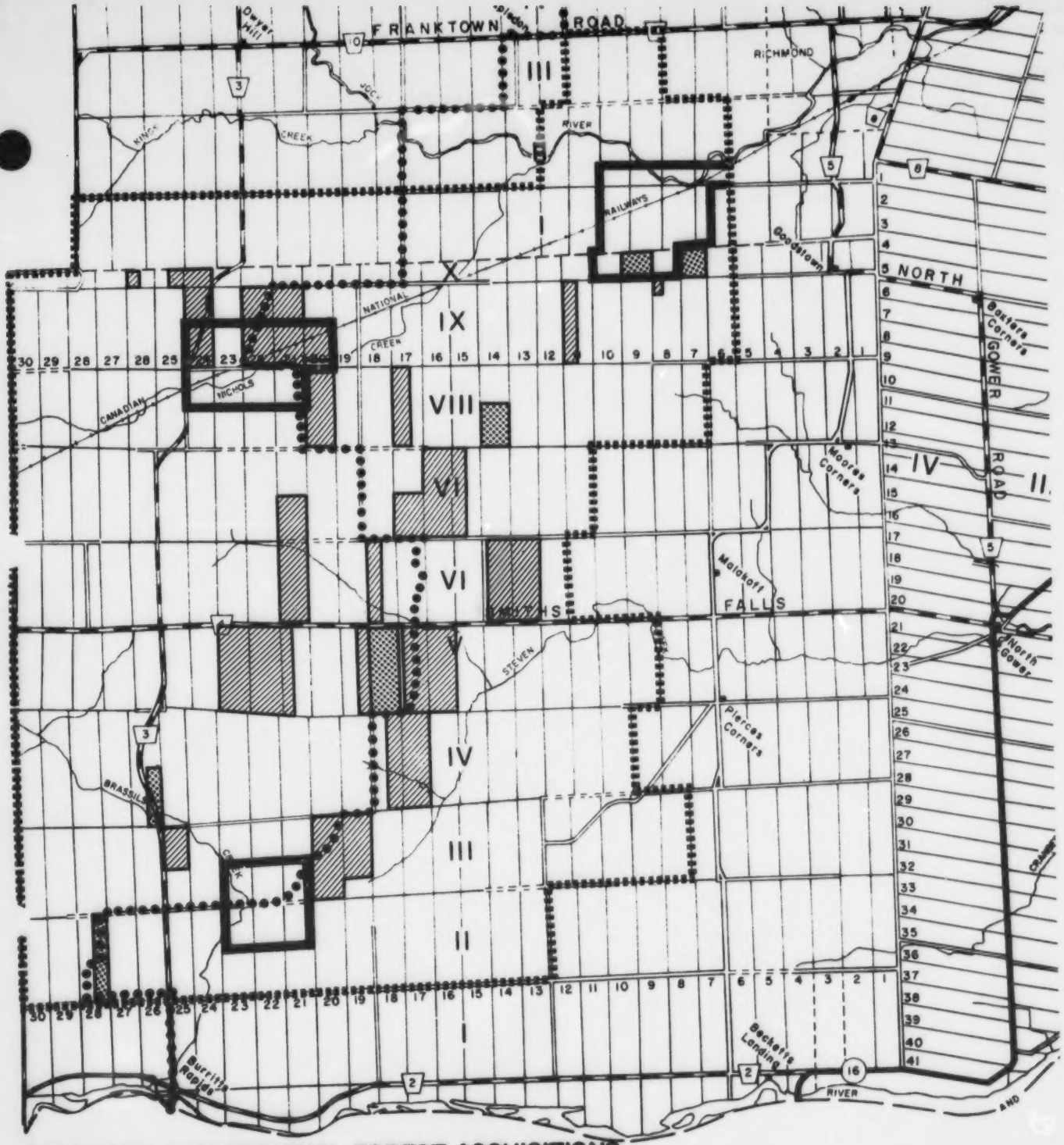
The land was purchased by the Regional Municipality by virtue of a forestry agreement between the Minister of the Department of Lands and Forests and the Corporation of the County of Carleton dated the 30th day of July 1964, by authority of the Forestry Act for a forty year period. (Appendix 1A). This was subsequently replaced on the 5th day of July 1973 when the Corporation of the County of Carleton was disolved and superseded by the Regional Municipality of Ottawa-Carleton on the 1st day of January 1969. (Appendix 1B)

Similarly by virtue of section 14 of the Ministry of Natural Resources Act 1972, a reference to the Minister of Lands and Forests shall be the Minister of Natural Resources. The Ministry of Natural Resources came into being on April 1, 1972. When the current agreement terminates the Regional Municipality may select one of several options respecting the future ownership and management of the forest. In general the Ministry has the right and responsibility to manage the

Table 1
LAND ACQUISITION SUMMARY

Date	Vendor	Location in Marlborough Township	Area	Price	Grant
1964	Kennedy	Pt. S½ lot 20, lot 21, 22, Concession IX	680	$30,000	$27,600.00
		lot 20, Concession VIII			
1970	Greer	W½ lot 16, SE¼ lot 16, Concession VII	150	5,000	3,772.65
1970	Billings	N3/4 lot 19, part lot 20, Concession III	330	4,000	3,020.32
1971	Meredith	W½ lot 17, Concession VIII	100	3,000	2,263.50
1971	Jones	S½ lot 21, Concession VII	100	4,000	3,013.50
1971	Saunders	W½ lot 28, Concession X	20	800	650.65
1971	Harbison	lots 13,14, Concession VI	400	24,000	17,245.95
1971	Timmins	lot 24, Concession IX	260	18,200	13,482.10
		E½ lot 25, lot 24, Concession X			
1971	Coates	W½ lot 21, lot 22, Concession V	500	25,000	18,799.50
		lot 21, Concession VI			
1972	Coates	lot 23, Concession V	200	12,000	6,043.75
1972	Caldwell	NE¼ lot 16, Concession VII	150	10,500	7,909.30
		W½ lot 17, Concession VII			
1973	Hodges	E½ 19, Concession V	100	8,000	5,959.47
1973	Perkins	Wp 18, Concession VI	100	12,000	7,419.05
1973	Hill	N½ of NW¼ lot 8, Concession IX	25	1,500	798.60
1973	Macdonald	lot 17, E½ lot 18, Concession IV	300	25,200	19,092.81
1973	Green	W½ lot 11, Concession IX	100	6,000	3,947.90
1973	Simpson	lot 16, E7/8 lot 17, Concession V	375	47,000	31,114.47
1974	Marlborough Township Forest	N½ lot 25, Concession III S½ lot 17, Concession VII	200		
TOTAL	18 Vendors		4090 acres	$236,200	$ 172,133.52 *

* includes 75% of legal fees.



BOUNDARY FOR REGIONAL FOREST ACQUISITIONS

REGIONAL FOREST – ACQUIRED

CROWN LAND

THE RIDEAU HIKING TRAIL

CONSERVATION AREAS IDENTIFIED BY THE PROVINCIAL GOVERNMENT

SCALE : 1:100,000

forest similar to Crown land, although the Crown Timber Act does no legally apply to any forest being managed under the Forestry Act. The policies and rules governing the sale of timber from Agreement Forest management units are similar to those on Crown Management units. The Ottawa-Carleton Forest is managed by the Management Forester under the administration of the District Manager at Ottawa. The physical activities of the forest are carried out from the Ottawa District Office located at Leitrim in Gloucester Township. (Appendix 2)

To encourage land purchases an agreement was approved on October 4, 1967 by the directorate of the Agricultural Rehabilitation and Development Act, ARDA (Appendix 3). This covered a three year period from 1967 to 1970 and provided for a 75% grant regardless of timber value. From April 1, 1971 onward the ARDA agreement was Province wide and all lands qualifying were accepted.

Land purchases are co-ordinated by the legal department of the Regional Municipality and follow closely the recommendations outlined in, "Procedures for Property Acquisition" suggested by the Regional Solicitor (Appendix 4). In keeping with the recommendations of the Regional Official Plan adopted in June 1974 lands are acquired per part 5, "Natural Resources and Environmental Management" (Appendix 5). The input for this was acquired from the Ministry as well as

Conservation Authorities, the Ottawa Field Naturalists and other interested groups.

In order to co-ordinate purchases monthly meetings were held attended by the forest supervisor OMNR, land purchaser from the legal branch of Ottawa-Carleton and a planner from the planning branch of Ottawa-Carleton. The procedure made certain that each parcel met the standards set out in the Management Objectives for the forest.

On October 1, 1973 the Township of Marlborough Forest, 200 acres, was taken over by Ottawa-Carleton. This included the accumulated forest debt to the Ministry from 1953-4 to 1973-74. (Appendix 6-1 C)

A management plan covers this forest area for the period April 1, 1962 to March 31, 1982. The management techniques recommended for Marlborough Forest will apply to Ottawa-Carleton in many instances. A summary of work done to March 31, 1974 appears in Appendix 6-1C.

Transportation

The road system throughout the acquisition area is generally good. Regional Roads 4 and 3 service the forest from east to west and north and south respectively. Regional road 4 connects directly with Highway 16 at North Gower.

Township roads, however are in fair to poor condition and most of the compartments not fronting on Regional roads 3 and 4 are inaccessible during the spring. The abandonment of the interior of the township has led to neglect of these roads although they have not been officially closed.

It is proposed to keep sections of these open as connecting links between forest compartments and they will form a part of the permanent all-weather road system for the forest. As more land is acquired adjacent to these roads a proposal has been directed to the regional solicitor to have the Regional Municipality take these over for forestry purposes.

Beginning in 1975 The Regional Municipality winter road maintenance crews have been assigned to work on the forest between snow storms by the road superintendent. One such job is to clear road rights-of-way including overgrown township road allowances in the vicinity of the forest.

2. PHYSICAL FEATURES

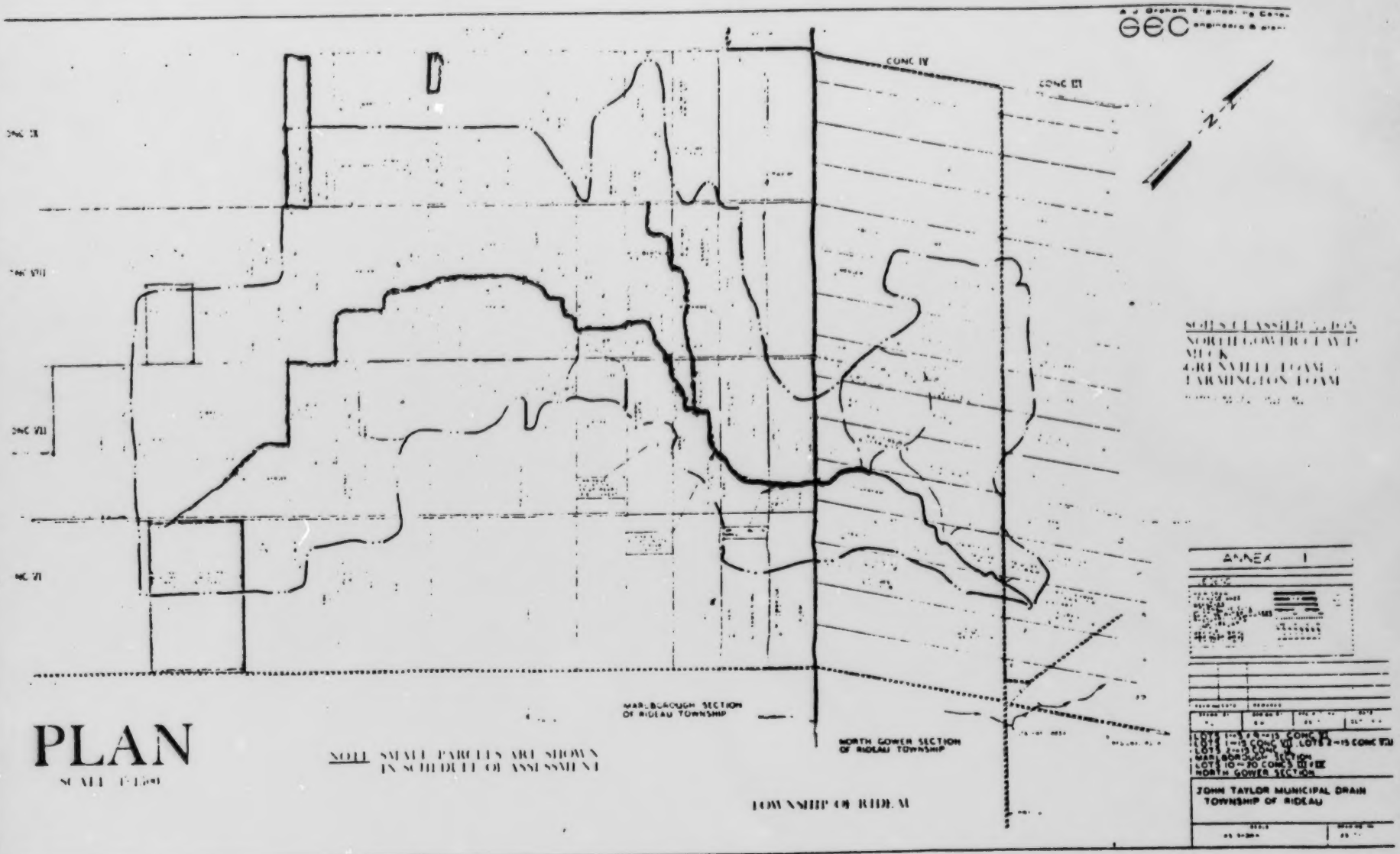
(a) Topography and Bedrock Geology

The topography of Marlborough is flat. It is part of the Oxford-March dolomitic limestone formation known as the Smiths Falls Limestone plain which covers most of the Township. Depressions in the limestone contain much desposits resulting from slow drainage in some areas.

Low scarps are in evidence throughout the plain and represent ancient beaches of the Champlain Sea. These are generally made up of cobbley limestone material and have potential as road construction material. One of the few limestone ledges portraying the geological history of the area is located at the Cedar Grove Picnic site on Regional Road 4. A detailed interpretation is found in Appendix 6.

Drainage is via three systems. Nichols Creek in the north emptying into the Jock River. Stevens Creek in the central part of the Township drains eastward into the Rideau River. Brassils Creek drains the westerly side of the Township and flows south to the Rideau River at Burritts Rapids.

During the latter part of the nineteenth century, agriculture formed a large part of the economy of Marlborough and a network of ditches drained most of the township into these three stream systems. The John Taylor drain emptying



PLAN

SCALE 1"=[illegible]

NOTE SMALL PARCELS ARE SHOWN IN SCHEDULE OF ASSESSMENT

into Stevens Creek at North Gower is an example.

Abandonment of farmland in the western portion of the township is the result of poor soils and frequent damming of streams and ditches by beaver. This has resulted in large inundated areas. These mainly dry up in summer but are utilized by waterfowl during migrations and in some instances as nesting areas.

(b)*Soils

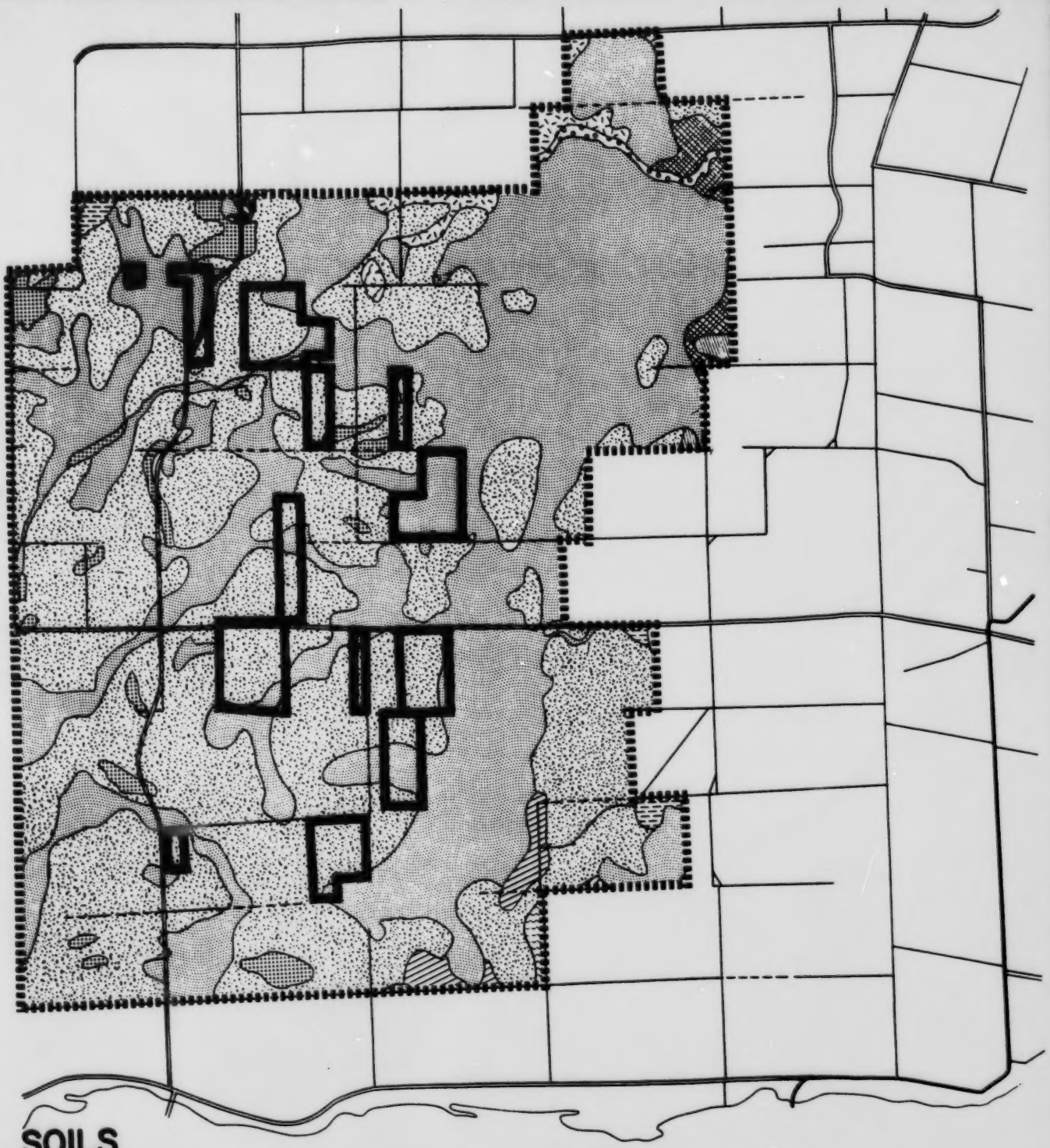
The soils are mainly poor. Although agriculture was active between 1820 and 1900 it was apparent that the shallow nature of the soils, their low fertility, extreme soil temperatures along with poor drainage were serious constraints. Virgin forest cover, however appeared to be good, possibly due to the higher nutrient content in the fissures of the bedrock.

Two broad soil types are evident in the forest: The Farmington undifferentiated and muck.

(a) Farmington Undifferentiated

This is characterized by extremely shallow soils, 0" - 18" over bedrock. These drain excessively in summer and are saturated in spring. Fissures in the underlaying bedrock increase drainage. Where these are absent, ponding results limiting productivity.

* Soil Survey of Carleton County, By G.A. Hills and N.R. Richards, March 1944.


SOILS
MUCK
FARMINGTON – NOT DIFFERENTIATED
FARMINGTON SHINGLY LOAM
FARMINGTON SANDY LOAM
FARMINGTON LOAM
LEITRIM GRAVELLY LOAM
NORTH GOWER CLAY LOAM – SHALLOW MUCK PHASE
GRENVILLE SANDY LOAM
KARS GRAVELLY SANDY LOAM
RUBICON SAND
BOTTOM LAND
BRIDGMAN SAND
SCALE : 1 : 100,000

The profile is characterized by a dark yellow-brown layer just below a thin organic layer. Other forms such as Farmington shingly sandy loam may be observed throughout the area and are quite productive for tree growth.

Nutrient levels are generally low but available calcium and magnesium are medium to high.

Jack pine does extremely well on the Farmington series and is being extensively planted as a cover crop for other species such as ash and maple which are expected to regenerate naturally. White cedar is found on this soil type in varying quantities, but the extremes of soil moisture, temperature, frost heaving, leaf litter, and heavy white grub infestations are serious constraints to natural regeneration.

(b) Muck

Muck is associated with ponding in areas of permanently poor drainage. The profile consists of a fibrous surface layer largely of sedge origin. This is underlain by a woody layer. The third organic layer is a sticky well-decomposed black muck. This layer rests on blue-grey mineral material or bedrock.

The vegetation found on muck varies from the elm-ash association, the cedar-fir-spruce association, cedar-tamarak association or willow, alder and sedge. Drainage is the key to productivity and efforts must be made to improve this by beaver control, minor ditching and furrowing.

(c) Climate

The weather station at the Central Experimental Farm at Ottawa has been keeping records since 1890. The following data is extracted from these.

Climatic Data *

Mean annual temperature	41.6° F
Mean summer temperature	66.6° F
Mean winter temperature	14° F
Frost free period - 146 days (May 7-September 30)	
Average length of growing season	190 days
Mean annual precipitation	34.24"
Mean summer rainfall	15.74"
Mean annual snowfall	90"
Prevailing wind direction	
winter	NW - W
summer	SW - S

* Soil Survey of Carleton County, Province of Ontario, printed 1944, by the Experimental Farm Service, Dominion Department of Agriculture and the Ontario Agricultural College.

3. NATURAL FEATURES

(a) Tree Species and Stands

The majority of the agreement area is forested. It is made up of stands originating from three sources:

Natural stands which have always been used for timber production, natural stands pioneering old agricultural land, and plantations.

Natural stands which have been cut-over since early settlement as a source of wood have been subject to fires of varying sizes the most widespread being the, "great fire of 1870" which swept most of the County of Carleton. All age classes are below 100 years. The most recent fire occurred in 1948 and burned over about 100 acres in Compartment 13, 14, and 15. Cedar, Balsam fir, White spruce, Poplar, Birch, Basswood, and maple predominate.

The second type of stand has regenerated old cleared agricultural land and sometimes takes the form of nearly pure white cedar stands. Cedar is in the "Other Conifers working group" and makes up 61% of the total productive forest area. Old stone fences and other signs of man's past agricultural activities are in evidence. Poplar is the pioneer species in many cases and is followed by an intermediate stand of spruce, fir, and cedar. The climax is sugar-maple-beech with admixtures of ash, basswood, cherry and oak.

Plantations are the third type of forest and range in age from 1 to 20 years. Planting is extremely difficult due to the shallow soils, and most sites are able to support only jack pine as a pioneer cover crop. Scotch pine is subject to bird and porcupine damage and early mortality is much higher. Other species such as white pine, white spruce, white cedar, silver maple, and basswood could be planted under cover of other trees such as poplar.

The species composition is indicated by the working groups shown in Table 2.

TABLE 2
AREA SUMMARY IN ACRES

Water	0
Non-forested land	65
Forested Land	
-Non-productive	389
-Productive	

Working Group	Production Forest	Protection Forest	Total Productive	Total %	
White Pine		3	3		
Red Pine		79	79	2	
Jack Pine		112	112	3	
White Spruce	25	181	206	6	
Other Conifers	1961	245	2206	61	
Hard Maple	82	21	103	3	
Poplar	577	193	770	21	
Other Hwds.	128	29	157	4	
Total Forested Land	2773	863	3636	100	3636
Total Area					4090

Ottawa-Carleton Forest

Inventory conducted by District staff 1973, 1974

(b) flora and fauna

The complex tree species composition of the Great Lakes - St. Lawrence Forest region results in a corresponding variety of forest habitats and consequently a great diversity of other plant life along with many species of animals.

The upland mixed and hardwood forests are a year-round home for ruffed grouse, coyotes, wolves, raccoons, red squirrels, red foxes, skunks, chipmunks, flying squirrels, and many smaller mammals, chiefly mice and shrews. In the spring the forest floor is carpeted with wild flowers such as hepaticas, dog-toothed violet, white trillium, blood root and spring beauty. After the forest canopy has leafed out for the summer the woods are a nesting habitat for many species of migratory birds including the broad-winged hawk, great crested flycatcher, least flycatcher, wood peewee, veery, ovenbird, white throated sparrows and scarlet tanager.

In lowland thickets and wood edges adjacent to fields, tangled growth of such shrubs as chokecherry, wild grape, highbush cranberry, wild raspberry, and hawthorn provide food for wildlife as well as excellent cover. Varying hares and groundhogs make their homes here and during the summer, nesting birds include the brown thrasher, catbird, mourning dove, cedar waxwing, yellow warbler, rose-breasted grosbeak, baltimore oriole, song sparrow and common grackle.

Open fields, mainly abandoned farm and pasture land have few trees to shade out sunlight from the ground so weeds abound. The weeds offer an abundant source of food for the seed-eating birds that nest here such as the vesper sparrow, and goldfinch. The abundant insect life makes the open fields a favourite spot for the sparrow hawk, eastern kingbird, killdeer, bobolink and meadowlark.

Around the many ponds and marshes characteristic summer birds are the great blue heron, red-winged blackbird, mallard, black duck, blue-winged teal, spotted sandpiper, belted kingfisher, tree swallow and yellowthroat. Most of the ponds were created by beaver which are over-abundant and have become a nuisance due to flooding of large areas. Muskrats, mink and occassional otter are associated with the ponds. Around the border of the ponds and marshes are the sedge meadows and stands of speckled alder, willow, red-osier dogwood, highbush cranberries and cattails. Many beautiful wildflowers grow in the wetlands - blue flag, marsh marigold, jewelweed, fringed gentian, swamp milkweed, joe-pye weed, bitter nighshade, turtle head, skullcap, bunchberry and blue vervain. In the wet woods jack-in-the-pulpit, sarsaparilla, clintonia, Canada mayflower, foamflower, pink pyrola, partridgeberry, and twinflower abound.

The cedar swamps and fringes are frequently utilized by deer as winter yarding areas. These are concentrated in two know sites in Compartments 3, 4, 5, 8, and 10 in the north and Compartments 24, 25, 26, 27, 28, 33, and 34 in the south part of the forest.

Wolves and coyotes are associated with these deer herds and other small game, and have caused serious damage to sheep and other livestock.

Special management techniques will be employed wherever possible to encourage wildlife populations. An intensive beaver program has been initiated to control this species (Appendix 5). A separate wildlife section is included in Part 8, Forest Management, Section (f) Wildlife Management.

4. HISTORY

(a) Early Historical Events*

The early history of Ottawa-Carleton is extremely interesting. Although settlement began as early as 1795, a few years before Philemon Wright began his industrial empire at Hull, Marlborough Township was not settled "internally" until the start of construction of the Rideau Canal in 1826.

On Friday October 19, 1791 Theodore DePencier initiated the first survey of Marlborough and finished on the 31st. of the same month. DePencier and his assistant Steadman, were responsible for surveying all the townships north of the Rideau.

The first settlers were the Burritt brothers, Stephen, Edmund, and Daniel, United Empire Loyalists fleeing inland from the St. Lawrence Front. The two former settled on lots 26 and 22, concession I respectively. In 1795, Daniel cleared lot 25. Soon others followed. Hurd, Bullis, Olmstead and many others, all settled on the fertile soils along the Rideau. In 1803 the population of Marlborough was 85. In

* Carleton Saga, by Harry and Olive Walker.

* Carleton County 1879, from the Historical Atlas of the County of Carleton - reprinted 1971.

1879 it was 1991. Today it is 1145.

Not until 1826, when John Pierce settled on lot 7, concession V did the interior open up. This was the site of the first township hall (Pierce's Corners) and John Pierce Jr. was elected the first Reeve in 1878.

The Burritt family prospered and the town of Burritt's Rapids became a busy country village linked by road to Brockville in the south and Merrickville and Kemptville to the west and east respectively. In 1879 the community had: telegraphic and daily mail facilities, 2 general stores, 1 bakery, 1 millinary shop, 2 shoe shops and 1 tin and stove store. Industries included: 1 grist mill, 1 sawmill, 1 steam shingle mill, 1 cheese factory, 1 woolen factory, 1 tannery, 3 blacksmith shops, 3 wagon shops, and 1 cabinet shop. Two excellent hotels, 2 churches, 1 orange hall, and a population, "which exceeded 300" complete the picture of rural affluence.

The first church in the township, the beautiful Anglican church at the corner of Regional roads 3 and 2 at Burritt's Rapids was build in 1831.

One of the earliest cemeteries in Carleton was located on the site of the hydro line on lot 21, concession IX, compartment 4. It was on a rock out-crop, surrounded by

a crude stone wall. Each grave was heaped with stone as the soil was too shallow to dig. On each was a rough pine slab with the name of the settler. This is believed to be the oldest cemetery in Carleton, circa 1816. Why anyone would settle such poor land is not known. Possibly early settlers from the Perth-Richmond road area squatted there. Unfortunately vandals destroyed it over the years. According to a local resident, when the hydro went through the stones were used to support the poles. He also said, "the land was cleared as far as I could see in any direction when I was a lad," that was about 1900. The forest age-classes in the area along with signs of settlement such as stone piles, and fences bear this out.

The early forest was mostly pine, cedar, tamarack, and mixed hardwoods. "Except for railway ties, hop poles, fence posts, etc. there was not a great abundance of other varieties of wood besides pine, which possessed a market value, and the object and aim was therefore to cut, slash and burn as much and as fast as possible." By 1879 there was a scarcity of good wood for fuel - "hardwoods are fast disappearing --". But even in this "energy crisis" the population in 1879 was assured that the peat beds (Mer Bleu), could be relied upon for many years in an emergency.

(b) Establishment

The forest area came under agreement on July 30, 1964. Table 1 lists the sequence of purchases from 1964 to 1974. Prior to the writing of this plan each area was compartmentized, the boundaries were marked, and all work was recorded on silvicultural cards by compartment and sub-compartment. Work done on the forest to date appears in Table 3 "Forest Operations", and Table 4 "Summary of Trees Planted in Thousands."

(c) Details of Forest Management to Date

(i) Tree Planting

Due to the shallow nature of the soils, the exposed condition of most planting chance, white grubs, low organic and nutrient content, few species survived in old fields. Jack pine planted directly into the thin sod, without site preparation to minimize frost heaving, was the most successful on the shallow soils. About $\frac{1}{2}$ oz. of granular chlordane was placed in each planting hole to combat white grubs. It also acted as a root stimulant.

White spruce was planted on organic soils in low areas. Where necessary furrows were ploughed at 6' spacing in the summer and the trees were planted at 6 to 8 foot spacing on top of the sod the following spring. Survival was fair. Competing brush had to be removed by hand tools,

TABLE 3

OTTAWA-CARLETON FOREST

Forest Operations

Year	Area (Ac)	M. Trees Planted	Stand Improve.	Timber Volume Cut					Roads			Forest Protection (M.)						
				FBM	Ft^3	Cords	Pieces	Poles	Cut	Imp.	Comp.	Fence	Ribes	Laconte	Bud Worm	Salvage Elm	Pj Sawfly	Spruce Sawfly
65-66	680	49										2	210					
66-67	680											½	100					
67-68	680	84	20															
68-69	680	50			3000.00					2.5	1.0			80				
69-70	830	40												17				
70-71	830																	
71-72	1160						852		3					5			25	5
72-73	2540	164	128													10	40	
73-74	3890	67		25861	1480.00	71.52	17				.5			3	10			
74-75	3890	7	188		1420.03	32.14		94						12				
Total	3890	461	336	25861	5900.00	103.66	869	94	3	2.5	1.5	2½	310	117	10	10	65	5

TABLE 4

OTTAWA-CARLETON FOREST

Summary of Trees Planted in Thousands by Species

Year	Locust	Pr	Pj	Ps	Le	Sw	Sb	Ta	Po	Ms	Bd	Aw	Ce	Total
65-66		12		20		17								49
66-67														
67-68						84								84
68-69			10			40								50
69-70			40											40
70-71														
71-72														
72-73		35	57	27		35		2		8				164
73-74		18			2	31				12			4	67
74-75	3		4											7
Total	3	65	111	47	2	207		2		20			4	461

REGIONAL MUNICIPALITY OF OTTAWA-CARLETON FORESTS

ANNUAL COST AND REVENUE SUMMARY

Expenditure	to Mar 31/65	Apr 1/65 to Mar 31/66	Apr 1/66 to Mar 31/67	Apr 1/67 to Mar 31/68	Apr 1/68 to Mar 31/69	Apr 1/69 to Mar 31/70	Apr 1/70 to Mar 31/71	Apr 1/71 to Mar 31/72	Apr 1/72 to Mar 31/73	Apr 1/73 to Mar 31/74	Totals
General Admin. and Office Overhead		11.26	161.47	16.31	148.60	266.81	67.22	273.95	3,014.55	3,786.21	7,746.38
Forest Protection and Pest Control		574.40	276.22	932.97	601.21	420.54	389.37	642.05	103.75	188.71	4,129.22
Maintenance	21.76	118.95	10.00	22.28	53.81	162.72	107.69	102.74	130.20	1,231.11	1,961.26
Planting	3,117.57	1,208.61		3,853.60	3,020.90	111.21	188.05	355.30	3,525.76	3,776.37	19,763.37
Roads Const. & Maint.					2,303.69			104.82		3,140.78	5,549.29
Tending Operations (Non-Revenue Prod)	12.41			110.16		135.00	48.40	408.96		208.31	923.24
Cutting Operations (Revenue Prod.)					248.14	45.00		191.65		9,059.52	9,544.31
Improvement Projects											
Special Ministry "Make Work" Programs									12,773.05		12,773.05
Sub Totals	3,151.74	1,913.22	447.69	4,935.32	6,982.35	1,141.28	800.73	2,079.47	19,547.31	21,391.01	62,390.12
Revenue										1,103.39	1,619.01
Sale of Forest Prod	5.00		500.00	10.62							
Net Totals	3,146.74	1,913.22	(52.31)	4,924.70	6,982.35	1,141.28	800.73	2,079.47	19,547.31	20,287.62	60,771.11
Grants				27,600.00		3,772.65	3,020.32		55,455.20	82,285.35	172,133.52
Total Acreage		680	680	680	680	830	1,160	1,160	2,540	3,890	3,890

or chemically where necessary. (Stand Improvement)

Other species such as red pine, scotch pine, tamarack, European larch, black locust, and red maple have been tried with varying results depending on site. At least 10% of all openings were left unplanted especially in the vicinity of wildlife shrubs to encourage wildlife and provide diversity.

(ii) Stand Improvement

This takes the form of thinning and improvement cuts, cleanings in immature natural stands and plantations and salvage cuts in elm stands. Where products were saleable these were removed from the forest by cutting permit or by Ministry crews. The monies received were credited to the forest account and appear in the annual report. Summary Table 5.

(iii) Harvest Cut

This operation removes the final crop from the forest and is done in such a way as to result in regeneration of desirable tree species. Cuts to date have been in mature cedar stands. The strip shelterwood system is the most promising for regeneration and deer yard management. Large clear cuts in cedar on shallow soils results in no regeneration of any value. Hardwoods are cut selectively where possible to protect the site and ensure regeneration.

(iv) Roads

One and one-half miles of roads have been completed to date. Another $5\frac{1}{2}$ miles are being improved. These are of Class IV standard (Appendix 9) and are located to provide all-weather access to all compartments of the forest for management and recreation. Regional Municipality road crews were used successfully for road and recreational improvement work on the forest for the first time this year with excellent results.

(v) Fire Protection

The fire frequency in the forest has been very low. The last large fire recorded was in 1948 which burned in concessions VII and VIII. To date natural regeneration on this area has been poor. Poplar is slowly pioneering as a cover crop but dies back very early, producing little merchantable wood. White spruce and cedar are slowly becoming established in it's shade. A small slash fire occurred in 1973 on lot 21, concession VIII but was stopped before it entered the forest.

The primary protection agency is the Rideau Township fire brigade located at North Gower. They are provided with necessary hand tools for forest fire suppression and regular training sessions are conducted by the Ministry. A separate Fire Protection Plan is included in the District Fire Protection Plan and is available at the District Office at Leitrim.

This includes all Agreement Forests and Crown Lands.

(vi) Insects and Diseases

Insect damage has been noted in all plantations beginning about 3 to 4 years after planting. These are mostly defoliators and are kept in check only where necessary by insecticides applied with a mist blower or back pack sprayer. White grubs eat tree roots and can wipe out an entire plantation of seedling trees or seriously slow it's growth. Granular Chlordane is applied in the planting hole of every tree where this insect is encountered.

Spruce budworm has been increasing in Marlborough in natural spruce and balsam stands. Damage has been moderate to date. To minimize damage by this insect, mature balsam and spruce will be harvested to create a more mixed type forest. Aerial spraying is costly and impractical due to the complexity of forest ownerships.

In 1964 and 1965 an attempt was made to remove Ribes spp. to reduce white pine blister rust. This was impractical and costly due to the large areas of swamp and the wide distribution of Ribes. White pine is not a major species in the forest.

Dutch elm disease is widespread. Every effort is being made to salvage elm and encourage the regeneration of alernate species such as ash and red maple.

(vii) Recreation

Recreation includes hunting, hiking, snowmobiling, cross country skiing, picnicing and observing nature. The rugged "wilderness" of Marlborough is unique and because of its close proximity to Ottawa, 35 miles, it will come under heavier public use as the population of Ottawa expands toward its predicted 1,000,000 inhabitants by the year 2000.

The first recreation facility was set up by the, "Rideau Trail Association" in 1970 as it hacked out its 125 mile hiking trail from Ottawa to Kingston (Appendix 10). Public lands including road rights-of-way were the primary locations. As more unique features were noted the trail was re-routed to take these in.

The present location is used in summer by hikers and in winter by snowmobiles and cross country skiers. The latter being in the minority at present.

Three picnic areas have been cleared for present and future use (Section 10). The objective is to have at least one in operation on each of Regional Roads 3 and 4. In 1973 a parking area with picnic facilities was set up on Road 4 and called the "Cedar Grove Picnic Grounds." This has been well used. A more picturesque site has been located in Compartment 27. This is much larger and uses a unique rock

out-crop as its focal point. (Section 10). A total area of 1000 acres is accessible from this site. The proposal for the third site on Regional Road 3 are as well as all recreational proposals outlined in Section 10 Recreation.

Hunting has been carried on in Marlborough for many years. The deer population is fair and upland game birds such as ruffed grouse and woodcock are abundant. The entire forest area is open to public hunting. Section 9 expands in more detail the problems of game management.

Snowmobiling has gained predominance in 1974 and 1975 as a winter activity in Marlborough. Twenty-five miles of trail are open for public use and parking areas are open all winter.

In general the forest area has enough diversity of water, flora and fauna to be of interest to everyone. Camping is not permitted on the forest.

5. ECONOMY

Ottawa-Carleton forest has provided seasonal employment apportunities for local labour since its inception in 1953. (Marlborough Township Forest). Labour intensive projects such as planting, tending, forest protection, road construction and recreational installations are carried out on a regular basis. Make-work projects can be carried out on the forest in times of economic stress thus minimizing welfare payments.

The forest products are saleable to many sawmills, pulp mills, a fibre board plant, veneer mills and cedar post yards within 75 miles of the Forest.

Local demand for fuelwood and special wood products is constant. The Ministry will sell forest products at the most advantageous stumpage rates by cutting licence to anyone applying or by tender.

Estimated sales under this plan may be determined from Section 11, "Summary of Operations".

Principal Industries

Pulp Mills

Canadian International Paper Company - Gatineau Point, Quebec.

E.B. Eddy Paper Company - Hull, Quebec.

Thurso Paper Company - Thurso, Quebec.

Canadian International Paper Company - Hawkesbury, Ontario.

Domtar Limited - Cornwall, Ontario.

Sawmills

The James McLaren Company - Thurso, Quebec.

Albert Larocque Lumber Company - Hawkesbury, Ontario.

Other mills outlined in the Ministry publication, "The Primary Wood-Using Industries in Ontario."

Particle Board Mills

Canadian International Paper Company - Gatineau Point, Quebec.

Veneer Mills

Tweed Veneers - Tweed, Ontario.

International Plywoods - Gatineau Point, Quebec.

Cedar Post Yards

McGibbons Post Yard - R.R. #

Johnston Cedar Posts - R.R. # , Carleton Place, Ontario.

Rudls Cedar Posts - R.R. # , Carleton Place, Ontario.

Cedar Oil Distillers

Edward Billings - Burritts Rapids, Ontario.

6. AREA AND GROWING STOCK

A summary of the productive forest area by age-class and working group in acres is shown in Table 6.

Table 7, summarizes the growing stock and increment of all species by age-class and working groups in gross total cubic feet per acre. The total growing stock is 4513.8 M gross total cubic feet or approximately 53,103 cords.

TABLE 6

SUMMARY OF PRODUCTIVE FOREST AREA

by Age-Class and Working Group

in acres

Working Group	*B&S	1-20	21-40	41-60	61-80	81-100	Total
White Spruce	22		3				25
Other Conifer	57	28	753	750	84	289	1961
Hard Maple			21	16	45		82
Poplar	118	26	287	146			577
Other Hardwoods			36	68	24		128
Protection Forest	291	361	63	133	15		863
Total	488	415	1163	1113	168	289	3636

Ottawa-Carleton Forest
Inventory Conducted by District Staff 1973, 1974

* Barren and Scattered

TABLE 7

GROWING STOCK AND INCREMENT-ALL SPECIES

by Age-Class and Working Group

in gross total cubic feet per acre

Age Class (acres)	WORKING GROUP White Spruce	Other Conifer	Hard Maple	Poplar	Other Hardwoods	Protection Forest	Growing Stock Gross Tot. M. Cu. Ft.
B&S						169	
Vol./Ac.						652	110.2
CAI/Ac.						39.0	
1-20		28		16			
Vol./Ac.		293		918			22.9
CAI/Ac.		44.1		58.6			
21-40		753	21	287	36	63	
Vol./Ac.		1411	1395	1171	1194	1330	1554.6
CAI/Ac.		90.8	53.0	67.0	106.0	36.0	
41-60	3	750	16	146	68	133	
Vol./Ac.	1467	1853	1731	1411	1585	1168	1891.0
CAI/Ac.	98.4	97.9	65.0	80.0	38.0	50.0	
61-80		84	45		24	15	
Vol./Ac.		1500	1866		1650	540	257.7
CAI/Ac.		85.5	53.0		75.0	29.0	
81-100		289					
Vol./Ac.		2344					677.4
CAI/Ac.		72.9					
Growing Stock M. Cu. Ft.	4.4	3264.0	141.0	556.7	190.4	357.4	4513.8

B. OUTLINE FOR MANAGEMENT

7. MANAGEMENT OBJECTIVES AND SYSTEM

A meeting of the Forestry Committee of theCounty of Carleton was held on April 10, 1963. Present were members of Council: Howard Perkins, Archie Riddell, Ford Patterson, Harvey Argue, Rae Grinnell, Timber Supervisor, Department of Lands and Forests and W.D. Black, Agricultural Representative, Department of Agriculture. A decision was made to create more intensive interest in forestry in Carleton.

On April 19, 1963 a delegation of the above addressed Council and a tour of Larose Forest was arranged.

The following year a forestry agreement was made between the County of Carleton and the Ministry of Lands and Forests.

In December 1973 a meeting was held between the Management Forester, Department of Lands and Forests and the head of the Land Planning Section of the Regional Municipality of Ottawa-Carleton to determine the management objectives for the Forest. The final objectives were determined December 17, 1973 and are attached.

PAPER

DATE

County Forest Committee Is Formed

A step towards establishment of a county forest in Carleton was taken by county council this week. A committee of five county council members, with Reeve Howard Perkins of North Gower Township as chairman, has been formed to establish the forest. Other members are Deputy Reeve T. Al Stanley of Osgoode Township; Deputy Reeve Harvey Craig of Goulburn Township; Deputy Reeve Harry Fleming of Torbolton Township and Reeve J. C. Donnelly of Marlborough Township.

A delegation from county council and members of the Department of Lands and Forests inspected the 20,000-acre Larose Forest at Bourget in Russell County last year.

If the forest is established here land would be acquired by county council and the forest would be managed by the Lands and Forests Department. District Forester is H. Rae Grindell.

"Carleton has many acres of marginal land which would be suitable for a project of this kind," Reeve Perkins told The Citizen.

"High costs of importing lumber from other areas for local building make a county forest an attractive prospect, especially when we can utilize land that would otherwise lie idle. Profit from the county forest would be put back into the project. It would also provide a source of employment for local labor."

Box 434,
R.R. #6,
Ottawa, Ontario.
K1G 3N4

9-48-1

December 4, 1973.

Mr. G.G. Miller,
Head, Land Planning Branch,
Regional Municipality of Ottawa-Carleton,
222 Queen Street,
Ottawa, Ontario.
K1P 5V9

Dear Mr. Miller:

Thank you for your letter of November 23. A formal management plan for the Regional Municipality Forest has been in a state of preliminary planning for some time and each parcel of land, prior to acquisition, is discussed with a definite management objective in mind. Messers Brerton, Cornell and Schaefer make up the land acquisition committee with guidance from the Regional Municipality Solicitor, Mr. Cameron and yourself. The official plan for the Regional Municipality recognizes the Marlborough Twp. area as suitable for "conservation and recreation."

With the foregoing in mind we propose to initiate formal management planning this winter. A land area of significant size has been acquired to provide a nucleus for a comprehensive operating plan.

...../2

This takes the form of a set of forest ledgers documenting in detail the operations to occur in each forest cover type. An accurate record is kept as work progresses and is cross-checked with the intent of the plan.

The prospect of a population of 1 million people within an hour's drive of the forest most certainly indicates a high degree of multiple use oriented strongly to recreation. With this in mind a list of tentative management objectives has been attached for your consideration.

I suggest a meeting be held as soon as possible to discuss these in order that data may be acquired this winter.

Yours very truly,

W.D. Adlam,
District Manager.

M. Schaefer/dm

Regional Municipality
of Ottawa-Carleton
222 Queen Street
Ottawa Ontario K1P 5V9
Planning
Department

Municipalité Régionale
d'Ottawa-Carleton
222 rue Queen
Ottawa Ontario K1P 5V9
Département
de l'Urbanisme

LANDS
PARKS
PERS.
FOR.
R. SU

December 17, 1973

Our file: 30.313
Your file: 9-48-1

Mr. W. D. Adlam,
District Manager,
Ministry of Natural Resources,
P.O. Box 434,
R. R. #6,
Ottawa, Ontario
K1G 3N4

Attention: Mr. M. Schaefer

Dear Mr. Adlam:

Further to your letter of December 4 enclosing the suggested management objectives for the Ottawa-Carleton Forest, we have reviewed them and have the following observations.

In view of the expected doubling of the Regional population to 1,000,000 and the relative proximity of the Ottawa-Carleton Forest to a large growing urban area, compared to other county forests in Eastern Ontario, we see the Forest as having a very important recreational role to play to the extent, for example, that the Stony Swamp area has today. With this in mind, and the fact that the land in Marlborough is not in general very well suited for timber production, we see the prime objective as being to provide a range of recreational opportunities insofar as this is consistent with maintaining the area in a predominantly natural state. Following from this are certain considerations which add to some of the management practices listed in your outline and relate to the inventory you will be conducting.

Wildlife management: this would include identifying areas used now or which could be suitable for deer wintering yards; areas suitable for waterfowl purposes and whether any flooding is desirable and possible in this regard; streams which might be stocked with fish.

Forestry operations: we do not want to afforest all open areas as these have value for recreation as well as for wildlife. We might even want to consider the clearing of certain areas for a specific purpose.

Trail system: not all trails should be usable by vehicles. We should consider the potential for interpretive nature trails - this is particularly important because of the heavy use now made of the trails in the Stony Swamp area.

Areas of scientific interest: this would include geological and geomorphological features as well as plant species and habitats.

Once all the information has been collected, a plan should be developed including a staging program related to how much can be accomplished each year.

We would like to see the Regional Forest managed so as to encourage its wide use by the public and trust that the above comments will be of assistance in this regard. Once you have completed the inventory of existing conditions we would be interested in reviewing these with you in order to develop an appropriate plan.

Yours truly,

G. G. Miller, Head,
Land Planning Branch.

GGM:bh

OTTAWA-CARLETON FOREST

Management Objectives

To provide recreational and educational opportunities based on the aesthetic and productive capacities of natural and artificial woodlands and wetlands.

To develop timber resources through efficient forest management consistent with the above.

To develop favourable wildlife conditions.

To provide assistance to the existing farm community within the forest area through a willingness to lease lands for grazing and/or forage crops, to maintain and erect fences, to refrain from reforesting some areas that have potential for grazing and/or forage crops, and to develop wildlife management programs which are compatible with livestock raising and sound drainage programs.

Within the framework of these objectives the following management practices should be considered as normal operational procedures:

Reforestation of most open areas suitable for tree growth.

Timbering operations with a high degree of utilization and reasonable brush control for aesthetic as well as fire protection values.

Access roads and trails should be suitable for travel throughout the year. Roads and trails shall be located for forest operations, forest protection and wildlife management. Public recreational use such as hiking, snowmobiling, cross-country skiing and access for hunting purposes will be considered in the location of all roads and trails.

Picnic areas shall be established at strategic locations throughout the forest.

Special parking areas will be developed as required.

Signs shall be erected where necessary.

Weed control shall be in accordance with local regulations.

Ranger patrols shall be commensurate with the problems of protection inherent in a forest intensively managed and adjacent to high population densities.

The management of the forest shall incorporate the latest proven techniques, and shall emphasize the value of efficient forestry, recreation and wildlife management activities.

(a) Quality Woodlands

The forests of Marlborough are situated on what are considered poor growing sites for the production of high quality forest products. The average site class is 2.5. The principal species are cedar, white spruce, balsam fir, poplar and birch. Other more valuable hardwoods such as maple, basswood, ash, and oak are found in scattered stands on the well-drained, fertile and deep-soiled ridges. Hardwoods are also common along fence rows. It is expected that these remnants will be seed sources for the future hardwood stands expected to replace many of the pure conifer areas existing today.

Because of the extreme shallowness of the soils each stand will be judged on its ability to reproduce a crop as good or better after harvesting. A semi protection forest situation exists here and excessive exposure of a site by clear cutting or burning will result in a setback of at least 20 years in the succession of the stand.

The chief silvicultural system will be the strip shelterwood in conifers and selection in hardwoods. Clear cutting in aspen stands to enduce aspen regeneration will be considered for wildlife purposes. Shrub planting will also be considered for visual diversity and wildlife habitat improvement.

(b) To Provide Recreational Opportunities

The goal in Agreement Forest management is to provide opportunities for quality outdoor recreation for the people of the Ottawa region while retaining the natural features of the area. This involves multi-use management using refined techniques to avoid ecological damage. Year-round activities such as hiking, snowshoeing, snowmobiling, cross-country skiing, bicycling, outdoor education nature study and hunting will be provided for in a quality environment. All activities provided must be compatible with the recreation plan.

(c) To Develope Favourable Wildlife Conditions

As human population increases and the amount of woodland decreases, there is a demand for places to observe, photograph and hunt wildlife. The objective, in an area so close to a high urban population, should be to create a diversity of habitat types through a program in which both timber production and wildlife management for recreational enjoyment are mutually benefited.

8. FOREST MANAGEMENT

(a) Division of the Area

The forest area has been divided into compartments ranging in size from 20 to 200 acres, the average being approximately 100 acres. The compartment is the smallest permanent division of the forest. All activities are recorded by compartment and sub-compartment. A sub-compartment is usually a forest cover type. The forest inventory ledger is based on sub-compartments. Each sub-compartment is assigned to a working group defined by a specific species content.

Compartment boundaries run in a north west - south east direction following or paralleling existing lot and concession boundaries. Physical features such as roads, hydro lines etc. are used for both compartment boundaries and base management lines. Base management lines run in a north east - south west direction and are the sites for extraction roads where practical. The boundaries will be maintained 1 chain wide during the first operating period to create a windfirm and permanent edge.

The existing road system is utilized where possible. All regional roads form the Class I road network while township roads are Class II (Appendix 9). A Class I or II road forms at least one boundary of a compartment where

possible. Class III and IV roads are constructed through each compartment and are all-weather gravel roads to provide rapid access.

The following is a list of the compartments by township lot and concession, and area. Table 7.

TABLE 7

LIST OF COMPARTMENTS
MARLBOROUGH TOWNSHIP

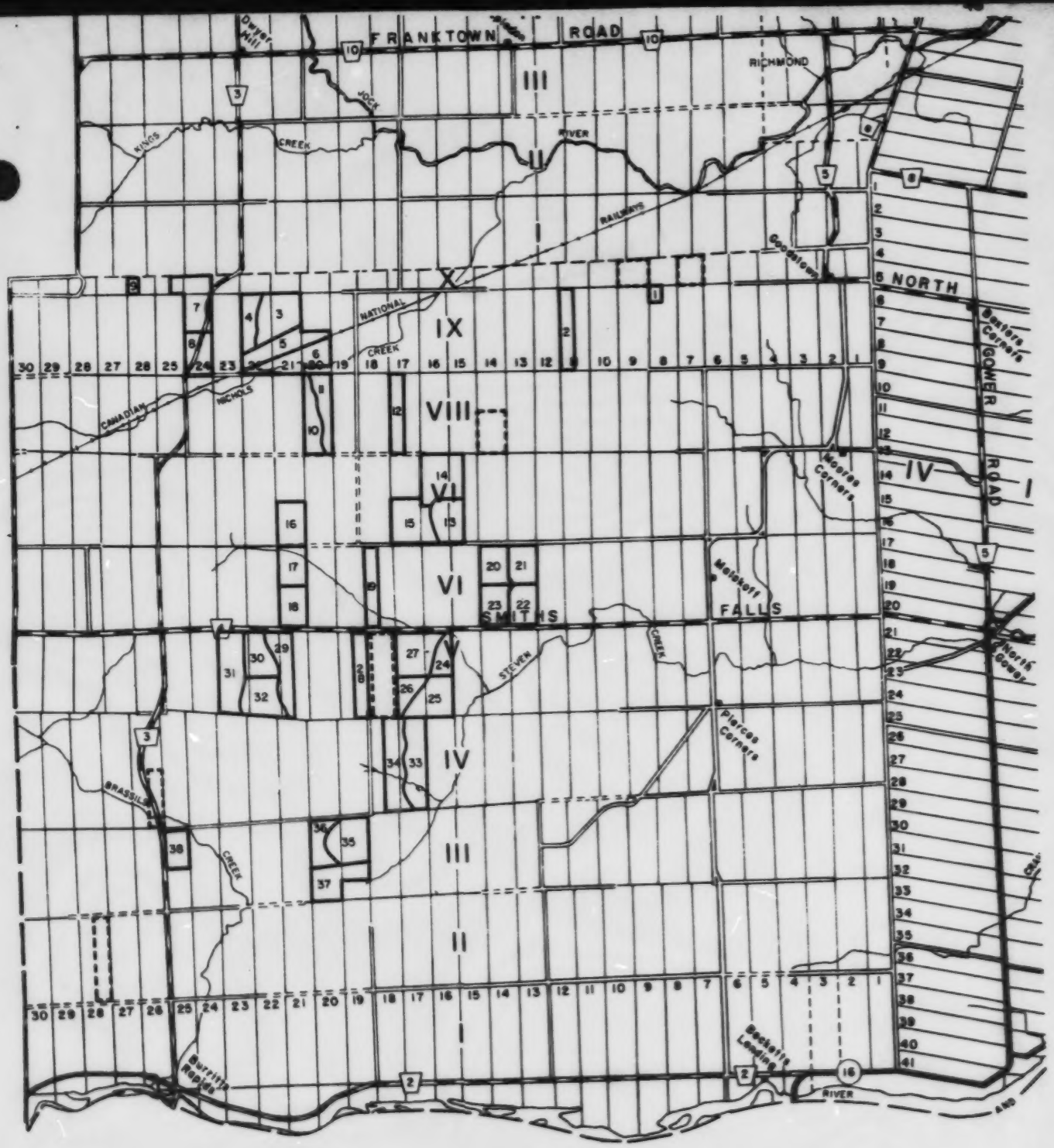
COMPARTMENT NUMBER	LOT	CONCESSION	AREA ACRES
1	NW 1/8, 8	IX	25
2	W1/2, 11	IX	97
3	N1/2, 21 NE1/2, 22	IX	151
4	NW1/2, 22	IX	98
5	Pt Lots 20, 21, 22	IX	96
6	Pt Lots 20, 21, 22	IX	122
7	N1/2, 24, 24, E1/2, 25	IX X	128
8	S1/2, 24	IX	91
9	W1/2, 26	X	34
10	W1/2 Lot 20	VIII	92
11	E1/2, 20	VIII	99
12	W1/2, 17	VIII	94
13	SW1/4, 15 pt S1/2, 16	VII	124
14	NW1/4, 15 pt N1/2, 16	VII	179
15	S1/2, 17, pt S1/2, 16	VII	122
16	S1/2, 21	VII	106
17	N1/2, 21	VI	103
18	S1/2, 21	VI	95
19	W1/2, 18	VI	99
20	N1/2, 14	VI	107
21	N1/2, 13	VI	101
22	S1/2, 13	VI	93
23	S1/2, 14	VI	92
24	pt N1/2, 16	V	72
25	S1/2, 16 pt S1/2, 17	V	135
26	pt S1/2, 17	V	53
27	pt N1/2, 16, 17	V	140

COMPARTMENT NUMBER	LOT	CONCESSION	AREA ACRES
28	E1/2, 19	V	98
29	W1/2, 21, pt N1/2, 22	V	88
30	pt N1/2, 22, 23	V	108
31	pt. 23	V	123
32	pt S1/2, 23, 22, 21	V	153
33	pt 17	IV	130
34	pt W1/2, 17 E1/2, 18	IV	182
35	N1/2, 19 pt N1/2, 20	III	143
36	pt N1/2, 20	III	76
37	pt S1/2, 20 N1/2 of S1/2, 19	III	138
38	N1/2, 25	III	103
TOTAL AREA			4090 Acres

OTTAWA-CARLETON FOREST

INVENTORY CONDUCTED BY DISTRICT STAFF

1973, 1974.



——— OTTAWA - CARLETON FOREST

- - - - - - - - CROWN LAND

SCALE : 1 : 100,000

(b) Silviculture

The general silvicultural procedure during the first operating period 1975 - 1985, will be the orderly refinement of preceding proven practices in order to make the forest more productive as well as an aesthetically pleasing place to visit and encourage a variety of wildlife species. Tree planting arrangements will be random avoiding monoculture where possible. Spacing will be from 6' X 6' to 8' X 8' using straight nursery stock.

Special consideration will be given wildlife and honey production.

Machine planting will be carried out where possible avoiding the straight row appearance adjacent to well-travelled roads. Where grass competition is a problem a chemical attachment will be used to dispense suitable herbicides.

Site preparation by single furrow plough at 6 to 8 foot spacing to improve drainage is necessary to rehabilitate good low-land sites. The prior removal of brush cover with a rotary cutter is usually required on these sites. Very wet areas will be left unplanted. A randomly arranged mixture of species will be planted on the tops of the furrows at 6 to 8 foot spacing. A spot treatment with herbicides to free the trees from competing grass may be required.

Harvesting will be carried out using the shelterwood or selection system as required. Skidding will be done by small tractors or horses to minimize damage to residual trees.

Insect and disease control will be carried out in all stands as required. Insecticides, herbicides and other chemicals necessary for tree survival and development will be used in prescribed amounts only when absolutely necessary.

The road system will be created to keep skidding distances at about 500 feet maximum. Hence a meandering permanent road network to class IV specifications will be established or quickly as possible spaced about 1000 feet apart.

Refilling plantations and cut-over will be carried out after periodic prescribed regeneration and assessment surveys. If the stocking is below that recommended for the desirable species, refill or supplementary planting will be carried out.*

In addition to these, other special silvicultural techniques and policies are outlined in Appendix 11.

* Minimum Stocking Standard for Timber Production, April 13, 1973.

The forest stands are classified by working groups and all records are maintained by these groups. A working group is an association of tree species with one species predominating. There are six working groups in the forest: white spruce, other conifers, hard maple, poplar, other hardwoods and protection forest.

White Spruce Working Group

25 Acres

White spruce does not do well on the shallow soils after planting. Natural regeneration has selected cracks in the bedrock for root establishment and performs with widely varying growth patterns depending on nutrient, consistency of moisture levels and growing space.

Fresh to moist sites will be prepared by brush cutting and furrowing if necessary the summer preceeding planting at 6' to 8' spacing.

Spruce and other associated species such as tamarack, white cedar, and red maple will be planted in random mixture at 6'-8' spacing on top of the furrows. If drainage is good, machine planting with a simazine band treatment to control grass should be used. Tamarack may be damaged by applications of more than 8 lbs. per acre of simazine.

Cleaning will be carried out either chemically or by hand as required. Suitable natural regeneration of hardwoods should be favoured.

Thinning will be carried out selectively where required during the second operating period.

Cutting in older age classes will be done using the strip shelterwood system. Associated species are balsam, cedar and poplar. Regeneration of spruce and cedar will be favoured. Balsam and poplar regeneration is usually successful and acts as a cover crop for spruce and cedar.

Protection from sawflies and spruce budworm will be maintained annually.

Other Conifers Working Group

1961 Acres

This is the largest working group on the forest and contains mostly cedar. Cedar is valuable for posts, pickets, and its boughs are used decoratively by florists. Essential oil may be distilled from its twigs, leaves and cones. Deer eat the leaves and twigs of cedar in winter and cannot usually survive without it. Every effort will be made to maintain this working group. Although cedar may grow in nearly pure stands it is associated with spruce, balsam and poplar.

Cedar seed is very light and extremely exacting conditions are necessary for its regeneration. Planted cedar grows very slowly in exposed areas. The dense mat of leaf litter must be broken to mineral soil and at least 50% shade should be provided. The strip shelterwood system in which the strips

are no wider than ½ chain should be used. Scarification by the logging equipment should suffice in summer. In winter supplementary scarification may be necessary.

Slash should be windrowed adjacent to or just inside the uncut stand.

Decomposition is slow but should be complete by the next cutting cycle, usually in from five to ten years. Burning could also be considered. Strips should be directed into the wind, north westerly. A minimum of exposure to sun and drying winds is desirable.

Cleaning shoudl be done carefully as not to expose the site unduly.

Thinning is impractical in cedar, but could be carried out as alternate narrow strip clear cuts about 8 feet wide at the picket stage with selective thinning on either side.

Hard Maple Working Group

82 Acres

This working group is predominantly sugar maple with admixtures of white ash, basswood, black cherry, poplar, birch and ironwood. Most of the stands are in the 61-80 age class and are merchantable.

Hardwoods are generally poor in quality and many rotations will be required to rebuild the organic matter lost during the early agricultural phase and the great fire of 1870.

The selection system will be used favouring the best species and individual stems. Crop trees in younger age-classes will be selected and released by a pre-commercial girdling of inferior competing trees. About 100 trees per acre will be selected as crop trees.

Poplar Working Group

577 Acres

Poplar is found in all other working groups and where it predominates it has been recorded as a working group. Poplar usually pioneers old burns, especially the 1948 burn. It also pioneers old fields. The quality of the aspen, which makes up about 50% of the poplars, is poor. Balsam poplar makes up the balance of the working group and is confined to deeper moist sites and is of somewhat better quality.

Aspens readily regenerate from root suckers. The tree developes well for about 15 to 20 years and disintigrates rapidly due to the heavy incidence of Hypoxylon canker. This is brought about due to competition, the lack of adequate nutrients and a root-bound condition brought about by confinement in rock crevaces.

Aspen is commercially acceptable as pulpwood but its main advantage is as a food supply for grouse and deer. The management of this species for wildlife purposes is

discussed in the wildlife part of section 8 (f) Wildlife Management.

Other Hardwoods Working Group

128 Acres

White elm and red maple either in nearly pure stands or mixed with black ash, balsam poplar, cedar, spruce, balsam fir, or tamarack make up this working group. Most of the elm stands are in the 41-60 age class and every effort will be made to harvest these first. The incidence of Dutch elm disease is very high causing heavy mortality of elm in all stands. This along with excessive flooding by beaver have caused this species to almost disappear. Every effort will be made to drain as many of the large productive floods as possible to enable the surviving black ash and red maple to develope. A complete beaver control program is outlined in Appendix

Protection Forest Working Group

863 Acres

Most of the plantations established on the old shallow soiled fields are in this group. White pine, red pine, scotch pine, jack pine and some white spruce and white cedar were planted from 1953 to 1974. Although survival was a failure to good, growth was slow. Jack pine is the only species showing promise.

White pine is found naturally scattered throughout most working groups. Blister rust damage is very high due to large populations of Ribies spp. in the swamps and rock crevases.

Red pine does not survive well on shallow soils. The ridges of Farmington loam will sustain growth but performance is poor. Frost, heaving, soil moisture and temperature extremes and excessive lime are contributing factors.

Scotch pine was planted in compartment 38 in 1954 but has done poorly. Heavy porcupine damage and debudding by birds have limited the height growth and form of the species. An exceptionally good provenance planted in 1966 on Compartment 38 did not survive.

Jack pine along with granulated chlordane in each planting hole to control white grubs, has excellent survival and reasonably good growth. This species will be planted on the better sites at 6' X 6' or 8' X 8' foot spacing. Scalping or the use of chemical herbicides as a site preparation method will be used only where competing grass is a problem. Most open fields are devoid of grasses due to white groubs, consequently mineral soil is exposed and frost heaving of natural regeneration and planted seedlings sometimes results.

Natural stands growing on delicate sites indicated by stocking less than 40% or site class 3 or lower have been included in the protection forest working group. These will be uncut or cut very carefully to ensure that the site is improved.

In all cases the composition of hardwoods will be increased to speed soil building.

(c) Allowable cut

All cutting activities will be governed by recreational, aesthetic and wildlife demands. As previously stated most of the forest could be considered Protection Forest although only 23% of the productive forest area has been allocated to the Protection Forest Working Group. Each stand must be carefully considered on it's merits prior to any cutting operation.

Table 8 outlines volumes to be cut by working group and species. A total of 1303.2 M. cubic feet will be harvested; about 130.3 M. cubic feet or 1532 cords equivalent per year for the operating period. This is about 28% of the total growing stock in the forest.

The 81 to 100 and 61 to 80 year age classes have been selected for these operations although thinning will be carried out when necessary in the younger age classes. A total of 1203 acres will be covered.

(d) Summary of Operations

The operating plan for the period April 1, 1975 to March 31, 1985 is entered in forest ledgers and summarized in Tables 8, 8a, 8b, 9, and 10.

TABLE 8

SUMMARY OF CUTTING OPERATIONS
FOR PERIOD 1975-1985

All Working Groups	All Species	Ce	Sw	Bf	Hc	Pw	L	Ew	Mh	Ms	Be	Po	Bd	I	Bw	Ash	Oak
Harvest Cut	512 Ac.																
G.T. Vol.	1016.8	425.0	244.5	11.9	10.7	38.0	1.5	3.1	18.1	2.6		243.4	6.6	2.0		5.1	4.3
N.M. Vol.	733.0	318.8	183.4	7.1	7.0	28.5	1.3	2.0	12.0	1.9		158.2	4.6	1.6		3.6	3.0
Equiv. Cds.	8618	3750	2157	83	82	335	15	23	141	22		1861	54	18		42	35
Intermediate Cut	691 Ac.																
G.T. Vol.	808.0	330.4	77.0	43.0	1.4		13.5	97.2	14.3	3.8	2.7	212.3	1.1	2.8	.3	6.1	2.1
N.M. Vol.	570.2	247.8	57.8	28.1	.9		11.5	63.1	9.5	2.9	1.8	138.0	.8	2.0	.2	4.3	1.5
Equiv. Cds.	6706	2916	681	330	10		135	743	111	34	21	1624	9	23	2	50	17
Total Cut 10 yr. period	1203 Ac.																
G.T. Vol.	1824.8	755.4	321.5	54.9	12.1	38.0	15.0	100.3	32.4	6.4	2.7	455.7	7.7	4.8	.3	11.2	6.4
N.M. Vol.	1303.2	566.6	241.2	35.2	7.9	28.5	12.8	65.1	21.5	4.8	1.8	296.2	5.4	3.6	.2	7.9	4.5
Equiv. Cds.	15324	6666	2838	413	92	335	150	766	252	56	21	3485	63	41	2	92	52

* Equivalent Cords based on 85 cubic feet/cord

G.T. Vol. = Gross Total Volume

N.M. Vol. = Net Merchantable Volume = Gross total volume less stumps, tops, and cull reduction.

TABLE 8A

SUMMARY OF CUTTING OPERATIONS-HARVEST CUT
FOR PERIOD 1975-1985
Volume in M. Cubic Feet

Working Group	All Species	Ce	Sw	Bf	He	Pw	L	Lw	Mh	Ms	Be	Po	Bd	I	Bw	Ash	Oak
Other Conifers	454 Ac.																
G.T. Vol.	965.5	413.1	244.5	11.9	6.4	38.0	1.5	3.1	1.0	.3		240.1	2.3	2.0		.8	
N.M. Vol.	697.4	309.8	183.4	7.1	4.2	28.5	1.3	2.0	.7	.6		156.0	1.6	1.6		.6	
Hard Maple	45 Ac.																
G.T. Vol.	42.9	8.6			4.3				17.1				4.3			4.3	4.3
N.M. Vol..	29.6	6.5			2.8				11.3				3.0			3.0	3.0
Poplar	13 Ac.																
G.T. Vol.	8.4	3.3								1.8		3.3					
N.M. Vol.	6.0	2.5								1.3		2.2					

G.T. Vol. = Gross Total Volume

N.M. Vol. = Gross Total Volume less stumps, tops, and cull reduction.

TABLE 8B

SUMMARY OF CUTTING OPERATIONS-INTERMEDIATE CUT
FOR PERIOD 1975-1985
Volume in M. Cubic Feet

Working Group	All Species	Ce	Sw	Bf	He	Pw	L	Ew	Mh	Ms	Be	Po	Bd	I	Bw	Ash	Oak
Other Conifers	243 Ac.																
G.T. Vol.	452.8	294.6	66.1	22.4			13.5	.8				54.6				.8	
N.M. Vol.	334.2	220.9	49.6	15.7			11.5	.5				35.5				.5	
Hard Maple	37 Ac.																
G.T. Vol.	28.3	.5			1.4				13.9		2.7	1.5	1.1	2.8	.3	2.0	2.1
N.M. Vol.	19.3	.4			.9				9.2		1.8	1.0	.8	2.0	.2	1.5	1.5
Poplar.	283 Ac.																
G.T. Vol.	236.6	35.3	10.9	20.6				19.1	.4			147.0				3.3	
N.M. Vol.	157.6	26.5	8.2	12.4				12.4	.3			95.5				2.3	
Other Hardwoods	128 Ac.																
G.T. Vol.	90.3							77.3		3.8		9.2					
N.M. Vol.	59.1							50.2		2.9		6.0					

G.T. Vol. = Gross Total Volume

N.M. Vol. = Gross Total Volume less stumps, tops and cull reduction.

TABLE 9

SUMMARY OF IMPROVEMENT OPERATIONS
for period
April 1, 1975 to March 31, 1985

Improvement	Annual Average		Operating Period	
	Area Acres	Number of trees	Area Acres	Number of trees
Site Preparation	--	--	--	--
Planting	28.0	15.7	280	157M
Cleaning	39.5		395	
Pruning	--	--	--	--

1. Tree Summary M. Trees

Jack Pine	94
White Spruce	31
Tamarack	8
Red Maple	5
Basswood	19
Total	157 M.

4. Picnic sites	2	
5. Hiking trails	2	13 miles
6. Interpretive trails	1	1½ miles
7. Snowmobile trails	1	25 miles

TABLE 10

OTTAWA-CARLETON FOREST

ACCESS ROADS

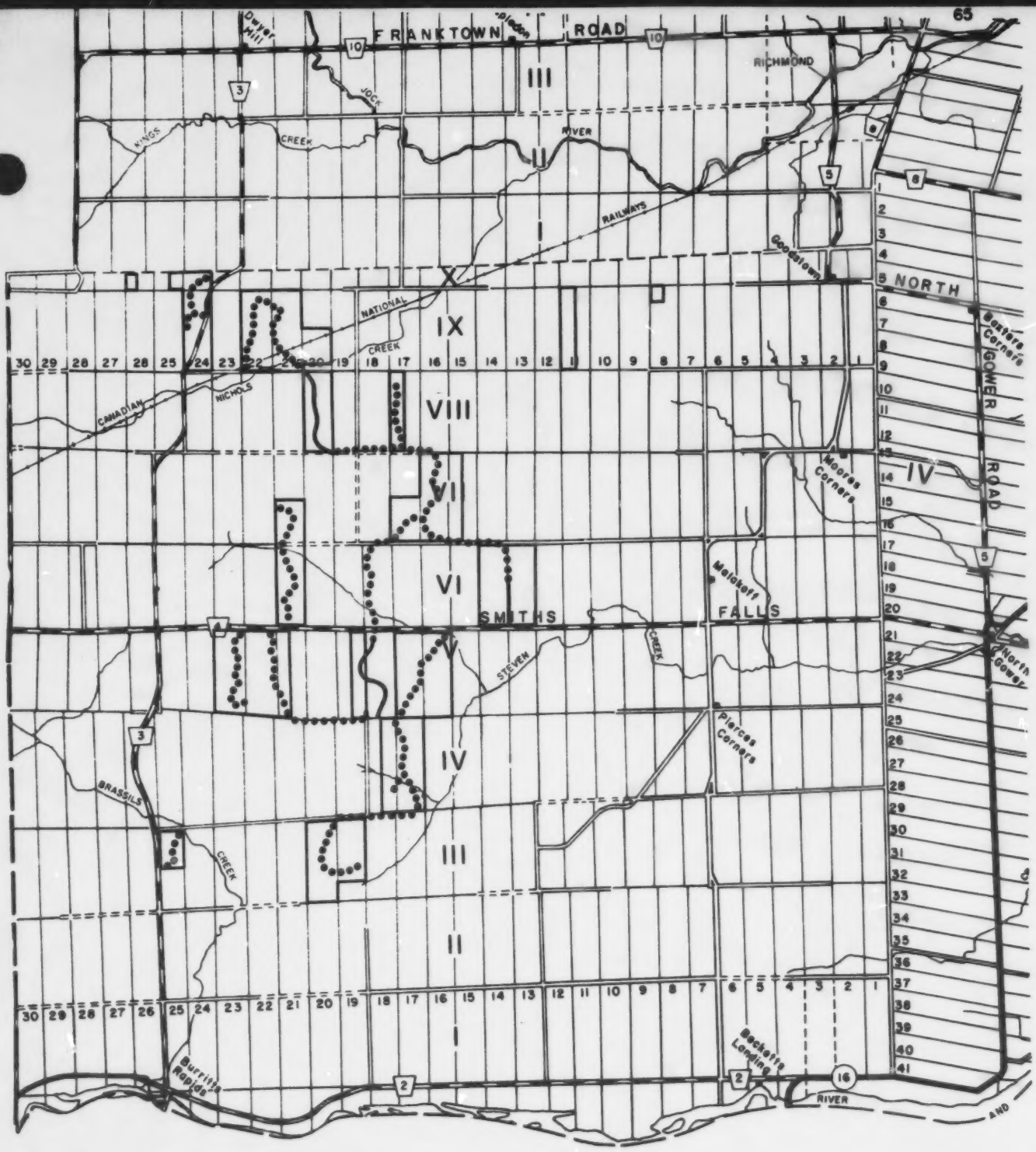
1975-1985

Class IV

*Measured in Miles & Tenths of Miles

YEAR	CONSTRUCTION SCHEDULE	MAINTENANCE SCHEDULE	TOTAL MILEAGE
1975/76	3.9*	1.8	5.7
1976/77	2.1	5.7	7.8
1977/78	2.2	7.8	10.0
1978/79	1.7	10.0	11.7
1979/80	3.2	11.7	14.9
1980/81	1.7	14.9	16.6
1981/82	2.3	16.6	18.9
1982/83	1.6	18.9	20.5
1983/84	1.1	20.5	21.6
1984/85		21.6	21.6

Refer to Appendix 9 for a complete description of Ministry access road standards.



OTTAWA - CARLETON FOREST

ALL WEATHER ROAD SYSTEM

——— EXISTING

●••••••••• PROPOSED

SCALE : 1 : 100,000

(e) Forest Protection

(i) Fire

Forest fires do not occur frequently in Marlborough Township. This is due to the scattered nature of rural residents and the extremely wet conditions existing in the non-agricultural areas. As residential building progresses throughout the forest area the careless burning of grass and garbage could be a contributing factor to increased fires. Slash resulting from cedar clear cuts is an extreme hazard and careless logging operators could cause fires.

The Ministry is responsible for prevention, water supplies, equipment, training, access and secondary assistance. The Rideau Township fire brigade located at North Gower is responsible for initial attack. Local residents and the travelling public are relied upon for detection.

A separate fire protection plan Appendix ' of the Report but not included in this binder, is on file at the Ottawa District Office.

(ii) Insects and Disease

Constant patrols for insects and disease are maintained and appropriate control measures are taken. Common insects encountered are: Leconte sawfly, white spruce sawfly, jack pine sawfly and spruce budworm. White pine blister rust,

Dutch elm disease and hypoxylon canker are common and uncontrollable due to high costs. Sanitation cuts usually keep these diseases at acceptable levels.

(iii) Vandalism

This takes the form of dumping, tree thefts, and the destruction of signs. As the forest expands and is opened by access roads the incidence of vandalism will increase. Increased use can be expected along trails. The driving of access roads by the public should be discouraged.

Suitable "No Dumping" signs will be erected. The Regional Municipality road crews, Ministry personell and the OPP will be briefed on how to deal with vandalism.

(iv) Fencing

Fencing is not required around any of the forest properties. This is due to the rapid decline of pasturing on the non-agricultural lands in the township. If a fence is required the cost will be shared 50-50 by the Ministry and neighboring landowner.

(v) Fireguards

These are not easy to construct and maintain on the rough, rocky, shallow soils. Where fire hazards exist, these will be minimized. Access roads are expected to act as fire breaks in most instances.

9. WILDLIFE MANAGEMENT*

(a) Compartment Survey

During the 1973-74 winter a timber and fish and wildlife survey was conducted in the portion of the Ottawa-Carleton Forests not previously cruised. The purpose of the wildlife survey was to obtain some idea of the present use of various types of stands. Sightings of wildlife were recorded and notes were made on the degree of use, either light (rated 1), moderate (rated 2), or heavy (rated 3) as exhibited by sign. In addition, a one page summary of impressions was made on each compartment. Each species was rated by compartment (Table 11 and Fig. 1) as follows:

$$\frac{(\text{Stand Acres X Rating})\ 100}{\text{Compartment Acreage X } 3}$$

Table 11. Compartment wildlife abundance ratings from sign observed during the 1973-74 winter inventory.

SPECIES	COMPARTMENT									
	3-6	33-4	24-7	12	35-7	2	10-11	13-15	1	Total
Hare	68	71	64	21	53	16	84	37	0	414
Deer	67	70	30	0	0	0	0	0	0	167
Porcupine	48	0	0	21	6	77	0	0	0	152
Grouse	62	13	15	0	4	4	9	8	0	115
Coyote	22	6	0	43	17	0	0	1	0	89
Beaver	10	16	0	8	0	0	0	10	0	44
Woodpecker	0	0	10	21	0	0	0	0	0	31
Lynx	2	0	0	0	17	0	0	0	0	19
Total	279	176	119	114	97	97	93	56	0	1,031

* by H. McLeod, District Biologist

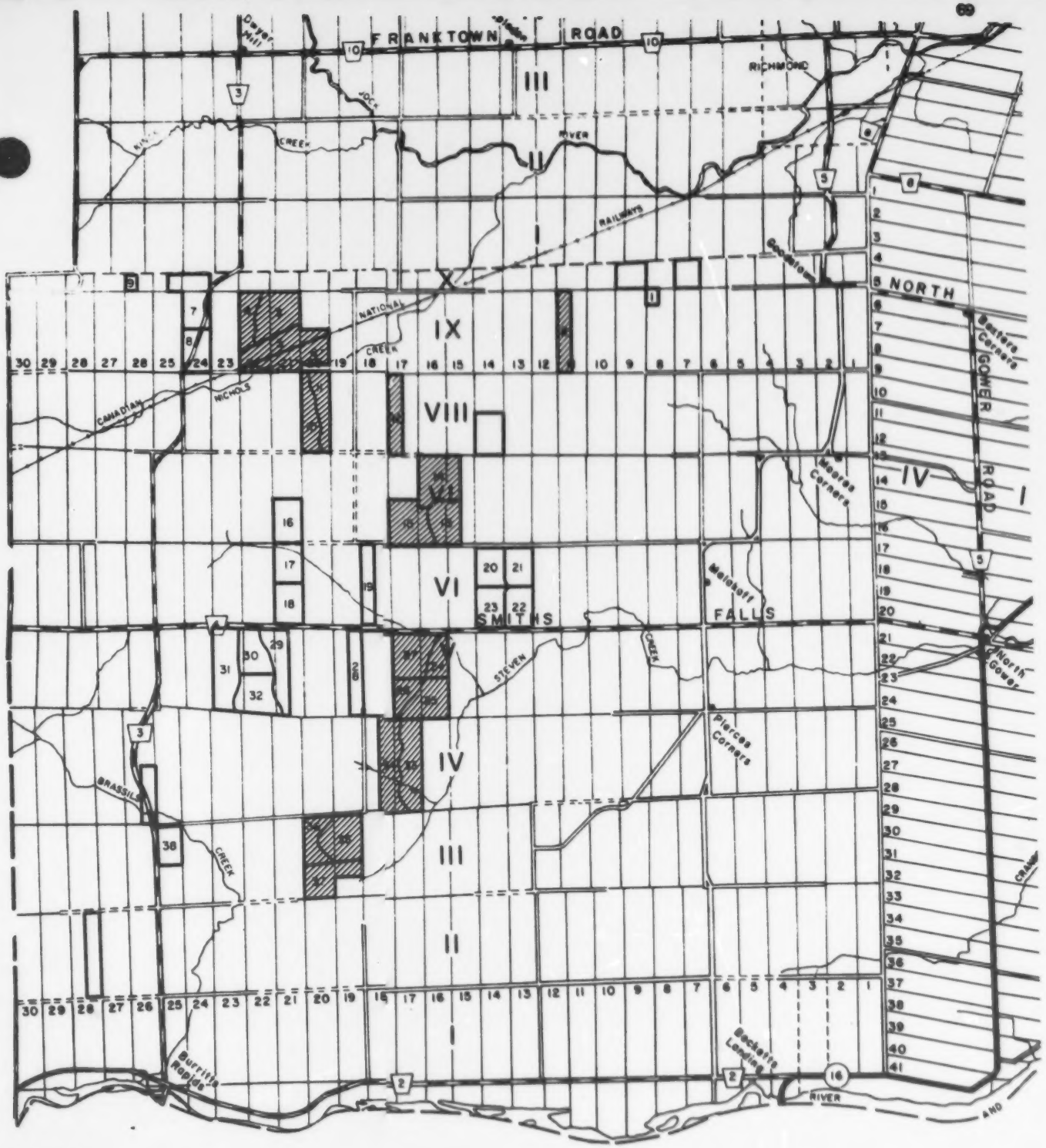


FIGURE 1

SCALE : 1:100,000

Thus if grouse showed heavy use in all stands in the compartment the score would be 100. There are some obvious shortcomings to the system, the time of rating in relation to the time since last snowfall allowed tracks to accumulate for instance, but we considered it adequate for the purpose intended.

In interpreting the table, comparisions should be made between compartments rather than between species, although numerically, certain species such as snowshoe hare are obviously greater than other species. Beaver numbers should be regarded mainly on a present or absent basis. Since the survey was conducted, woodcock were found to be present in the young aspen stands in compartments 13 and 14, where one would expect to find them. They may be present in some other compartments as well.

(b) Deer

(i) Status

The white-tailed deer is the only big game species in the Ottawa-Carleton forest. Records on the status of deer populations have been largely derived from the annual hunt in which deer are examined and hunters are questioned on deer killed and time spent hunting. The implication is that abundance of deer is roughly proportional to the hunting

effort required to bag one. Deer hunting records go back to 1951 with a 3 year gap between 1953 and 1955, followed by intensified efforts to increase sample size beginning in 1956 but probably not completed in all areas until about 1962. The following account of deer status in Ottawa-Carleton will include neighboring counties since it helps in forming an overal perspective.

Hunting pressure in Marlborough township has been high compared with other parts of eastern Ontario, consequently its delineation as a special study area beginning in 1956. This hunting pressure was the result of interest in a good deer population, its proximity of Ottawa, submarginal lands and a road network that lends itself to hunt camps, and a season that was 2 days longer than areas to the south and east since at least 1956 (Table 12). In that year the season opened two days earlier with the result that hunters from neighboring areas moved into the township in these first two days causing extra hunting pressure. In 1957 Marlborough township was surveyed by helicopter during the season and hunter densities were found to range from 10 to 50 per square mile.

Table 12. Season length in days for eastern Ontario (1951-74)

County or Municipality	Year											
	51	52	56	57	58-62	63	64	65-6	67-9	70	71-2	73-
N. Lanark	10	4	12	12	12	12	12	12	12	12	6	4
S. Lanark	10	4	12	12	12	6	6	6	6	4	4	4
Leeds	10	4	4?	4	4	6	4	6,4	6	4	4	4
Grenville	10	4	4?	4	4	6	6	6	6	4	4	4
Carleton W.	10	4	6	6	6	6	6	6	6	4	4	4
Carleton E.	CL*	4	4	4	4	4	4	4	4	4	4	4
Pres., Rus.	CL	4	CL	CL	4	4	4	4	4	4	4	4
S.D.G.	CL	4	CL	4	4	4	4	4	4	4	4	4

*CL = closed season
1953-56 data not available but season was open.

Field estimates suggest that while deer kill declined hunting pressure was sustained until at least 1969 or as late as 1970 (Table 13).

Mail survey data agrees with these field estimates on deer kill but not on hunter numbers. Based on the 1957 forest inventory figure of 35 square miles of forested land in this township, the maximum figures of 446 hunters and 150 deer killed represents an average of 11.7 hunters and 4.3 deer killed per square mile respectively.

Table 13. Hunting pressure and deer kill based on field estimates and mail surveys for Marlborough Township.

Year	Field Estimates		Mail Survey	
	Hunters	Kill	Hunters	Kill
1958	396	140		
1959	364	130		
1960	410	150		
1961	364	140		
1962	411	135		
1963	364	90		
1964	384	120		
1965	309	74		
1966	369	68		
1967	377	83		
1968	407	44		
1969	409	84	446	87
1970	411	43	187	46
1971	215	22	119	24
1972	145	10	155	29
1973	63*	16	317*	25*
1974	199	15	149	7
1975	210	8	--	--

OTTAWA-CARLETON RECEIVED JUL 30 1976 PLANNING DEPARTMENT

*Based on a combination of field estimates and mail survey. The decline in deer numbers in Marlborough Township has been much greater than other parts of eastern Ontario (Figure 2).

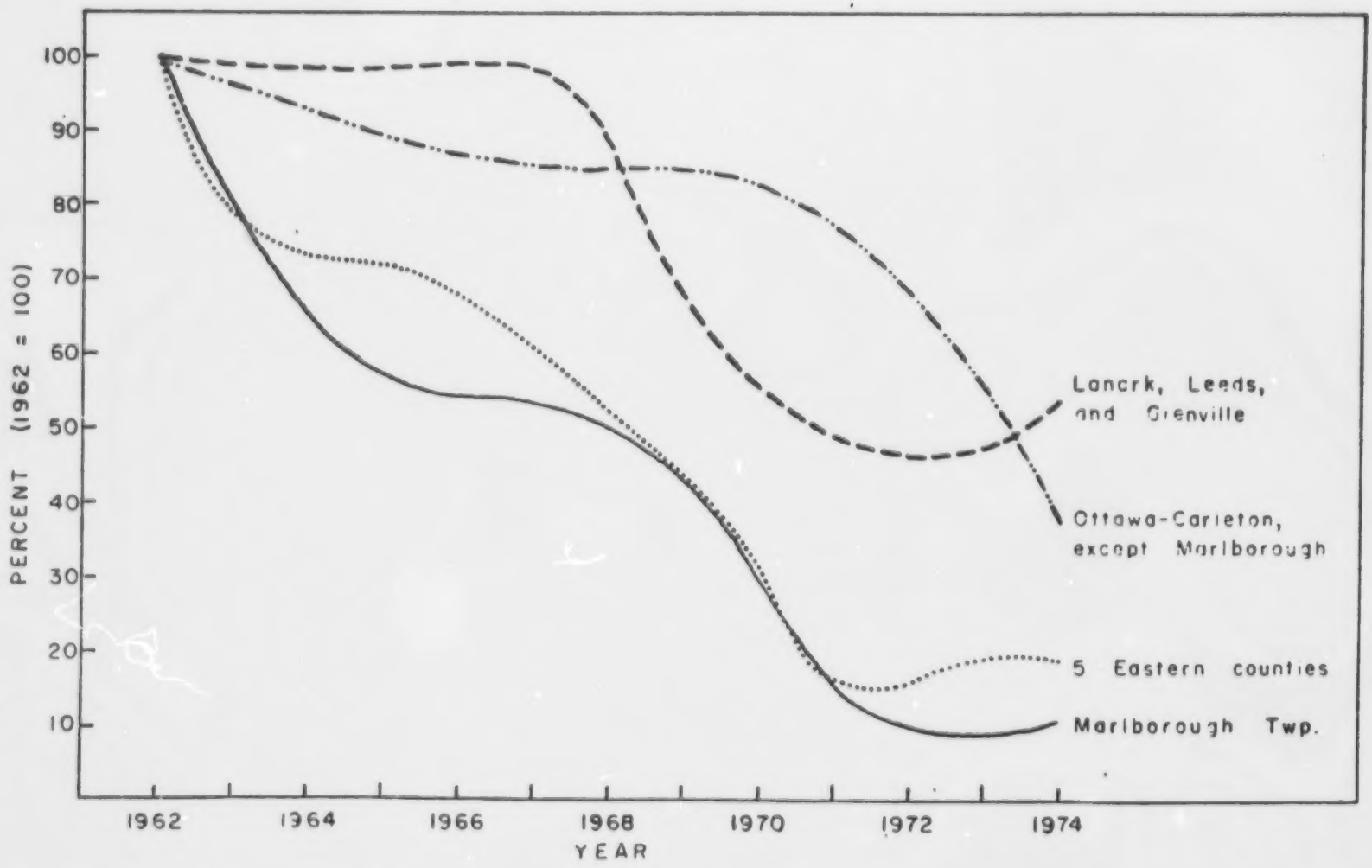


Fig. 2. Eastern Ontario deer kill as a percentage of 1962 kill. Curves fitted by eye between annual extremes in kill.

(ii) Management Objective

Before any management can take place there must be a realistic objective that we wish to attain and a committment on the part of everyone involved to achieve it. A plan is then devised using the best information available to reach this objective. Without an objective that comes to grips with the desired deer density, there can be no meaningful plan.

There is reason to believe that deer population in this Municipality are unlikely to reach former levels for a number of reasons. There has been an increase in country homes, and with this comes an increase in the dog population. Dogs of all sizes, breeds, and temperment habitually run deer in winter. Many deer are pregnant, weak, and vulnerable due to restrictive snow depths and food supplies at this time of year. Some wintering areas have been destroyed by construction or other developments. Food supplies and cover, however, are probably adequate for more deer than at present. Thus we would aim for a higher deer population than now, but probably not as high as formerly occurred. Subjectively, we would aim for deer populations in Ottawa-Carleton which are two-thirds the average 1957-62 levels, and providing a hunter success rate of 15-20%.

(iii) Plan

Rational: To increase deer populations presupposes that habitat will accommodate the increase (our assumption), and that there are ways of either increasing natality or reducing mortality. The only way we know of increasing birth rate is by increasing food supplies. This seems to require massive changes in forest stands. In order to increase deer in Michigan by this method, they are cutting up to 3/4 of a township in aspen stands. Formerly large populations in Ontario as elsewhere on the continent, followed logging and large fires. Neither approach seems applicable or practical in this part of eastern Ontario considering existing stands, snow depths, or land use, and in any event, we are assuming that present forest types are adequate to accommodate the increase.

The alternative then, is to reduce mortality. Of the means of reducing mortality at our disposal - increased effort at controlling dogs, poachers, legal hunters, disease, and accidents, the most practical avenue for control in terms of cost/benefit and impact is the control of hunters. At the same time, a program to control poaching would be pursued by ensuring that the conservation officers spend sufficient man hours in the forest to act as a deterrent to the would-be poacher. The presence of such officers would also assist in controlling depredation by dogs which is another factor requiring attention.

In summary, control of deer numbers is a matter of controlling the most controllable factors, spending less time on those less controllable, and accepting those which cannot be controlled (severe winters or much of the deer's range). Where less controllable conditions reduce the herd, then an adjustment must be made for this in the controllable factors, which is largely regulation of the legal kill.

Control of the legal kill then, is the prime means by which we suggest reaching our objective. It is the only efficient major means of making adjustments and having a significant impact on deer populations.

Method:
Control of hunting pressure

The Marlborough Township (now Rideau Township) deer population is at very low levels. The past two mild winters appear to have only stabilized the population or possibly increased it slightly. Deer in the remainder of the Municipality seem to be still declining. To avert further declines, the doe component of the herd must receive maximum protection. This can be brought about by one of two methods: a closed season, or a bucks only season. Since the former does not appear to be acceptable to the majority of area sportsmen at this time, the latter would be the alternative, even though some losses of does would probably occur with mistaken identity.

Other methods of harvest reduction:

(a) Shortened season: The present 4-day season is about as short as practical, considering the possibility that inclement weather could further reduce huntable days.

(b) Control of hunter numbers: This could breakup hunt camps and/or prevent some camps from hunting. Similarly it would restrict other individuals from hunting and is of doubtfuly value or even unnecessary should regulation of the buck-doe components of the herd (in favor of bucks) work satisfactorily in Ontario as it has in most parts of the United States.

(c) Regulation of hunting methods: This usually considers the type of weapons, use of dogs, and the number of people allowed in a party. Regulating the type of weapon used can have a

significant impact on the kill where very primitive weapons are used (such as bow and arrow) as an alternative to the more conventional kind. This has not been proposed to area sportsmen as an alternative since it seems doubtful that many would set aside their guns and buy bows and arrows; equipment that they are unfamiliar with. Rather, it would seem more likely that such weapons would gain favor with newer hunters and increased utilization would take many years.

Regulating the use of dogs would have little impact on deer kill. Provincial mail surveys show a 1-2% greater deer kill with dogs as opposed to no dogs, in a period of several years.

Regulating the number of hunters in a party would destroy the traditional camp system and be difficult to enforce.

In summary, other methods of controlling deer kill are socially or politically not feasible, or they would not have the desired impact on herd recovery. A temporary "buck only" season would therefore seem to offer the greatest possibility for herd recovery. When and if herd size increases to higher than desirable levels, a doe quota could be instituted to act as a control on further increases in the size of the deer herd.

Range Maintenance

As mentioned earlier, there would seem to be limited opportunity for large scale summer range manipulation so we must concentrate on maintaining winter range where feasible.

Most deer yards in the Municipality are of the cedar lowlands type, and there is very limited information or knowledge available for manipulating this type of stand in a manner which will insure regeneration. We have some experience in deer yard cutting at the Shirley's Bay Crown Game Preserve. To this we have additional observations on cut over cedar areas in Rideau Township some of which go back 35 years.

Deer require a tight overhead canopy of conifer cover in winter to reduce wind chill, intercept and re-radiate body heat, and to make travel easier. Snow is intercepted in the canopy and evaporated or sublimated back into the atmosphere giving reduced understory snow depth. Lowlands having these conditions are sought out by deer for comfort during the winter months. Such areas should also have some browse in the form of preferred foods such as maples, white cedar, dogwood, hazel, hobble bush, and trembling aspen. Studies elsewhere have shown that deer can exist on white cedar alone, but where hardwoods constitute the main diet, a mixture of several types is generally needed for a balanced diet. The problem then in cedar yards is one of providing food without destroying the shelter, and at the same time insuring regeneration so that the yard may be perpetuated.

The following are some guiding principles designed to do this:

Deer wintering areas should be regarded as sensitive areas wherein management should be directed first and foremost

at providing optimum benefit to the deer herd.

Cedar should be cut only in winters or parts of winters when the deer need the browse, namely in moderate to severe conditions, when deer are more confined and will use cut browse. This should take place in small amounts throughout the winter months. For instance, in a 60 year rotation, in a 40 acre yard, where half the winters are moderate to severe, 1/60 X 40 X 2 = 1.33 acres would be cut every other year. This amount would be cut and as it was eaten, more would be cut. If more food seems to be required than the yard can sustain, satellite yards can be attempted, or failing that, the herd should be reduced through hunting.

Cedar should be cut in east-west strips and no wider than 33 feet to reduce effects of the hot summer sun which dries out seedlings, particularly on shallow soils.

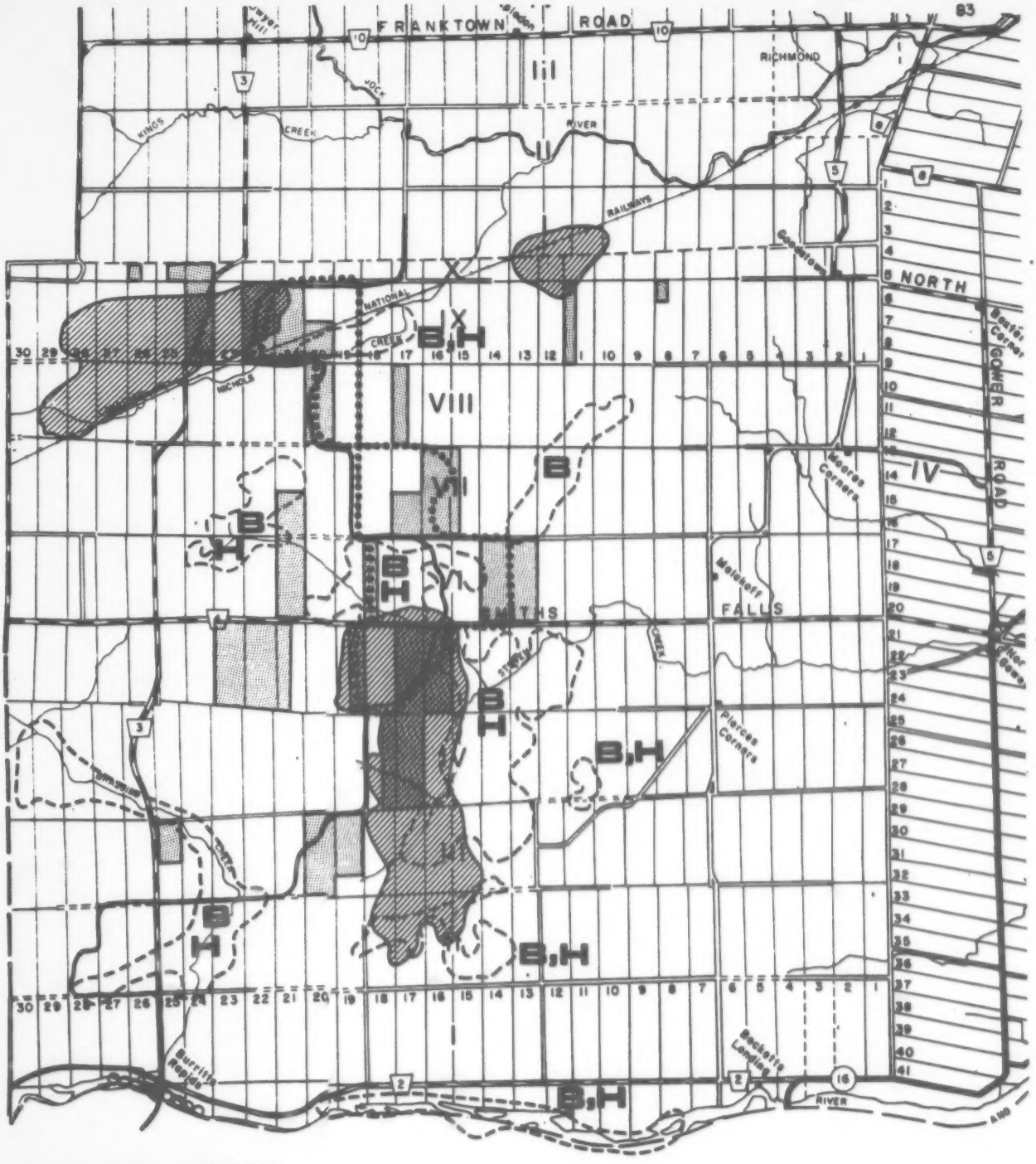
Where natural regeneration of cedar fails under the above techniques, the strips should be replanted with cedar nursery stock.

Other Managent Practices

Commercial Cutting: While deer should get priority in deer wintering areas, other activities and management procedures compatible with deer management could be permitted. These include hunting and land management for deer, grouse,

woodcock, and waterfowl. Trapping should also be permitted. Commercial wood cutting operations result in too much of the yard being cut at one time rather than in stages as the deer need it. It can also increase wind chill, particularly in small yards as we have in eastern Ontario. As such, commercial cuts should be avoided in these deer yards.

Snowmobiles: Snowmobile activity has been taking place in and around the yards in compartments 3 to 6 for several years. There is also a trail in the deer yard in compartments 24 to 27. While the effect of snowmobiles and trails on deer is a somewhat controversial subject, this writer is of the point of view that they represent a disturbing influence to deer which could restrict their activity in winter, causing further drains on their energy budget. People in close proximity to deer may cause unnecessary harassment. It is recommended that trails be re-routed away from deer yards where possible. Present snowmobile trails in relation to deer yards is shown in Fig. 3.



WILDLIFE AREAS

- SNOWMOBILE TRAILS
- RIDEAU TRAIL
- DEER YARDS
- FISH SPAWNING AREAS
- WATERFOWL AREAS
- B - BREEDING AREA
- H - HUNTING AREA
- OTTAWA - CARLETON FOREST

SCALE : 1:100,000

(c) COYOTES

There are no seasons on coyotes and while they may be hunted at any time of year most hunting takes place in the winter, providing a considerable amount of recreation with no apparent harm to the population. A number of sheep farmers have gone out of business as a result of repeated losses from coyote predation and several farms in the Rideau and Huntley Townships still have occasional coyote predation. The coyote is therefore regarded both as a nuisance and a source of winter recreation.

The policy has been to reduce or eliminate coyotes in problem areas by means of hunting or trapping and compensate farmers for their losses. Apart from their recreational potential, coyotes have value in the control of small mammals.

(b) BEAVER

Beaver populations in eastern Ontario as in most other parts of the province, have been increasing for more than 2 decades despite an increase in the number of licensed trappers and harvest.

Beaver often provide benefits to other forms of wildlife and to humans in the form of recreation and economic returns on the fur harvested. They create wetlands which are used

by waterfowl, shorebirds, muskrat and mink. Later when the pond becomes a meadow, a wildlife opening is present which adds diversity and edge to the forest.

Disadvantages of beaver activity include the blocking of streams which may restrict fish passage, increased siltation and stream temperatures, destruction of the forest through flooding and felling of trees, and in some instances, flooding or lowland deer wintering areas. To the disadvantage of people they block waterways and flood roads, cropland, and occassionally, valuable forests.

Beaver can withstand an annual harvest of about 1/3 the population. It is to the landowners advantage that this harvest takes place since unimpeded population growth results in the establishment of new colonies, many of which will create nuisance conditions. It also results in the building of higher dams on existing ponds to enable the beaver to get to new food supplies. These larger floods are not necessarily desired or anticipated by the landowner. The best management approach where beaver are desired is to keep them at minimal levels and the only practical way of doing this (in the absence of their natural control, the wolf) is by trapping.

The traditional use of trapping as a means of beaver control has not been as effective as required in populated areas for a number of reasons:

Landowners may be reluctant to give trapping permission to trappers they do not know.

Trappers are often reluctant to ask permmission to trap.

Many landowners are absentee owners, not present either to give permission to trap or be aware of a beaver problem.

Trappers do not have the same freedom to locate beaver colonies on private lands as they would on crown lands for instance.

There are no quota areas assigned to a trapper wherein the government supplies maps of live colonies and the harvest quotas.

Anti-trapping sentiment of urban landowners manifest by protests to various agencies or media, and sometimes by theft of traps.

Trappers vary in their knowledge and efficiency just like any group. Virtually all of them are trapping either to supplement their income, for a hobby, or both, rather than for their livelihood with the result that less effort is often expended than required to insure adequate beaver control.

Complaints of beaver activity occur most frequently in spring when there is plenty of water and the pelt is of no value. Trappers are understandably reluctant to trap beaver

when there is no economic return and a large proportion will not do so. Removing dams provides only temporary relief since beaver build them up again and the pool is quickly reflooded by the large supply of water.

(ii) Management Objectives

Minimize beaver colony size wherever possible.

Create maximum benefit to other wildlife species where desirable and practical.

Though information and education of trappers, encourage humane trapping and a quality product.

(iii) Plan

Through periodic aerial surveys in fall, live beaver colonies should be mapped and trappers assigned to these colonies. Where funds and time permit, this can be supplemented with landowner surveys (as in 1974-75) whereby owners are asked about beaver on their land and their attitudes towards them. In return owners are asked to allow trapping. Those wanting to maintain beaver and encourage other types of wildlife are provided with this information as well.

The reduction or elimination of beaver from troublesome areas is desirable but often unattainable for the reasons mentioned previously. In addition, trap wariness on the part of the remaining few in a colony, the trapping

conditions of a particular winter, the detection or knowledge of the presence of beaver in such areas, and the temptation on the part of some trappers to leave a few for seed stock are among the problems associated with resolving beaver problems.

In Ontario, trapper education has been accomplished with the assistance and co-operation of the Northern Ontario Trappers Association (N.O.T.A.) in North Bay. Started originally by the former Department of Lands and Forests to organize trappers, produce better handled pelts, and to obtain a fair price for trappers, it has expanded to become one of the largest fur sales in North America. Ontario pelts are presently being auctioned at the N.O.T.A. to fur buyers in many countries including Russia, China, and the United States. An annual trappers convention in North Bay is attended by thousands of trappers that may watch or participate in skinning demonstrations, observe new and more effective traps, and discuss trapping methods with experienced trappers from all over Ontario.

A local trappers workshop was held during November, 1974, in Ottawa, and was attended by 45 local trappers. Trapping skills, fur handling, and modifications to traps for more humane trapping was demonstrated by experts. A fur auctioneer from N.O.T.A. explained the grading of fur

so that trappers could better understand why their pelts received a particular grade.

During the 1973-4 trapping season, 297 beavers were harvested by licenced trappers in the Marlborough Ward of Rideau Township. With partial implementation of a special beaver management project designed to increase harvest and reduce nuisance problems, this harvest during the 1974-5 season was increased thirty-two percent to 393 beavers. The 1975-6 harvest dropped to 163 beavers because of a lower beaver population resulting partly from the increased trapping pressure during the previous season and partly from the dry summer in 1975. During 1975 and 1976 there was sharp decline in the number of complaints regarding nuisance beaver from landowners in Rideau Township.

(e) GROUSE

Grouse are abundant in compartments 3 to 6 and are found only occasionally or not at all in the remaining compartments.

Good grouse range is comprised of 5-10 acre stands of trembling aspen each in one of several well distributed age groups - brush for brood cover, pole size for nesting, pole-brush combinations for drumming, and mature trees (male) for winter budding.

In eastern Ontario, conifer cover near the mature aspen provides cover and roosting sites near food supplies and seems desirable as grouse are frequently found in this stand type combination during winter. In some parts of the grouse range, notably Minnesota, conifer cover, particularly

pine, is thought to be undesirable as it creates predator traps. Avian predators such as the owl are the main offenders in these areas. In this part of Ontario and probably in many other parts of the eastern grouse range, the conifer component is well used in winter and I believe necessary. The difference can probably be explained by differences in winter weather. In more northern climes there can be expected to be less crust conditions and fluffy snow substitutes for conifer cover as insulation from extreme cold and wind. In eastern Ontario where crust conditions are common in winter, conifer is probably needed as an alternative.

Opportunities for managing grouse to increase the supply will largely depend on the availability of commercially harvestable aspen stands. These are then clear cut in blocks according to a pattern at 10-15 year intervals so that there is a good mixture of the several age classes needed. This practice should be used sparingly and judiciously if at all in deer wintering areas where the main consideration is maintainance of cover and production of browse.

(f) WATERFOWL AND SHORE BIRDS

In the Ottawa-Carleton Forests, waterfowl depend primarily on beaver activity for their habitat. In the forested part of west Rideau Twp. there are presently 8 major beaver floods ranging in length (curved as well as

linear) from $\frac{1}{2}$ mile to $5\frac{1}{2}$ miles. As mentioned previously, a landowner survey is being conducted at the time of this writing (1974-75 winter) to determine attitudes towards beaver floods. Some floods are so large that they encompass many landowners and opinions differ. In general, farmers do not want beaver floods and absentee landowners do.

Some of the floods are 15 years old or older according to trappers. They are no doubt valuable as duck production areas. On the opening day of the duck shoot, hunters often have one or two wood ducks in their bag. The wood duck is a common beaver flood duck. A significant great blue heron rookery has been discovered recently on lots 11-13, conc. V. It is estimated that there are 40-50 heron nests in that area.

Until the present winter survey has been completed and each flood has been evaluated for food, nest sites, and brood cover, no exact management strategy can be developed. When this is decided, much of the planned work will be experimental for several reasons: (1) there has been little attention paid to beaver pond management for waterfowl here or elsewhere, (2) beaver ponds are difficult to manage because of the beavers activity, and (3) because it is a shallow basin it is subject to extreme water level changes depending on precipitation and temperatures and the

contol of water levels is the key to waterfowl production in any wetland.

The following are some management practices that could be attempted:

Rotation of beaver ponds. As ponds age they at first become very productive of aquatic plants, then production declines. This may all take place within a few years or less. To keep ponds in good production of plant and animal life they should be drained and dried out. This oxidizes organic accumulations and mineral soil components, revitalizing the pond. Toxic accumulations also decrease. In a beaver pond this may take place to a limited degree around the pond edges or if the season is hot and dry it may occur naturally. Man made control may allow a more complete and timed drawdown which is important. In order to be effective it would be necessary to first remove beaver from the pond and this may or may not be accomplished by heavy trapping the previous winter. Therefore, while this may be desirable, in practical terms it may not be possible, but could be attempted nevertheless.

Nesting sites: In any given habitat there is almost always a lack of suitable nesting sites. These could be provided in the form of artificial nesting areas for ducks, or if necessary for such birds as herons.

Cover: Brood cover can sometimes be established

where deficient by drawdown for 2 years or more. This encourages willow and alder.

(g) FISH

Of the three creeks passing through the agreement forest, only Steven Creek has had a stream survey (McLeod et. al, 1973). Temperatures in various parts of the stream varied between 74°F and 82°F, supporting a variety of warm-water fish species. Pike were found throughout the stream with larger sizes occurring east of North Gower. Eight to ten inch pike, which could either be young of the year or in their second year of life were found throughout the stream. Young largemouth bass about 3" long were found only between regional road 5 and the next road to the east. No adult muskellunge or their progeny were seen although musky were said to spawn in this stream in the late 1960's and apparently have been observed from the bridges at North Gower by local residents. Numerous panfish, rough fish, percids, and minnows were also captured.

Of possible management significance are the numerous beaver dams on Steven Creek. Twenty-two dams were found in total, all but one of which was situated west of Pierces Corners. It was thought at the time of survey that there was probably many more than this in the extreme upper

reaches where access was difficult. These dams could act as barriers to downstream movement of game fish such as pike and largemouth bass. One additional obstruction was formed by a private road built across the stream under which there were 3 culverts. Two of these had collapsed restricting the summer fow to the one culvert. Several instance of litter, and one of pollution were also noted in the report. The pollution was barnyard manure runoff resulting in a heavy local growth of filiamentous algae behind the stream roadway mentioned previously.

Brassils Creek passes through compartment 38 and empties into the Rideau River at Burritt Rapids. Near its juncture with the Rideau it supports a spawning run of yellow pickerel. This stream and Nicols Creek could be investigated at some future date to determine if there are any management possibilities.

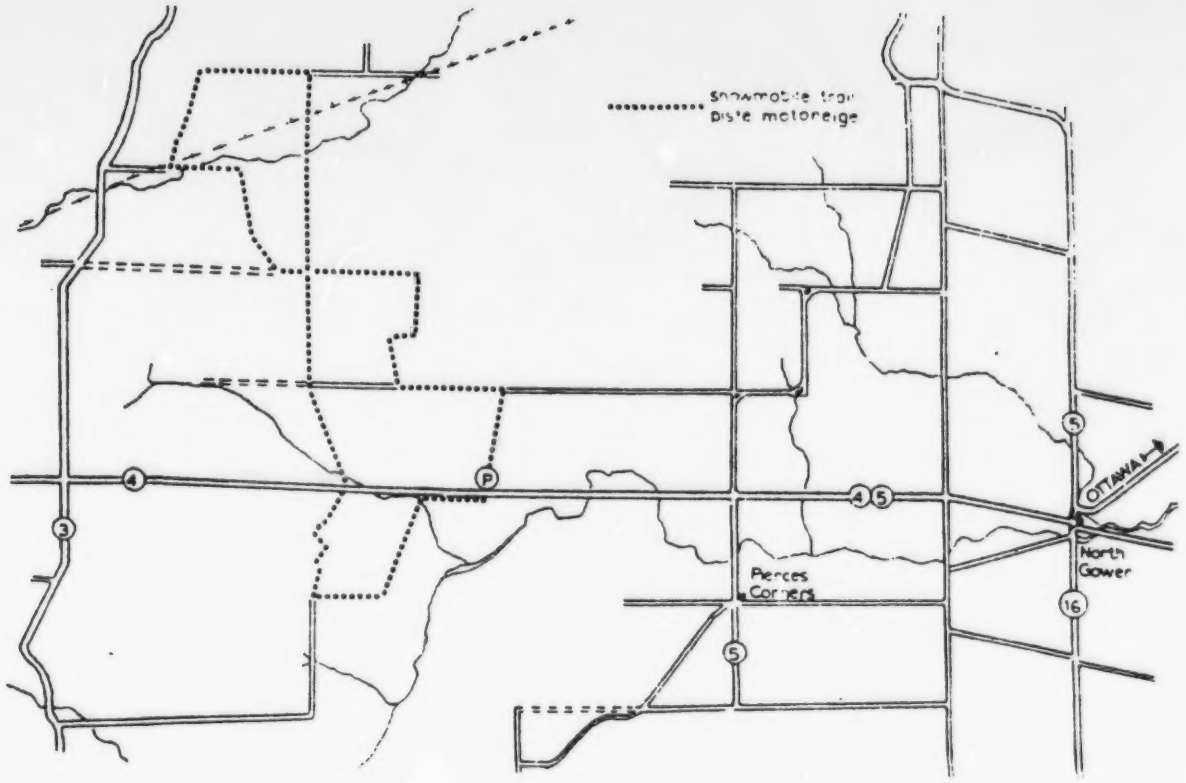
10 RECREATION

Recreation in Ottawa-Carleton will be of the passive type with as few structures as possible. Existing facilities include 1 picnic area, "Cedar Grove," 10 miles of hiking trail and 25 miles of snowmobile trail.

The Cedar Grove Picnic Grounds was established in 1973 in Compartment 22 on Regional road 4. It consists of a parking area for 10 cars, 6 picnic tables, an earth-pit toilet and garbage containers. Drilled wells are costly and their usefulness is questioned in as much as most visitors bring their own beverages. Wells will be provided only if necessary.

The Rideau Trail Association constructed 10 miles of trail through Rideau (Marlborough) Township in 1971. (Appendix 10) To date this has not been heavily used possibly because it is not too well known to the public and parking facilities were not available. Future plans provides for parking areas.

Snowmobile trails were constructed in 1973 to provide areas where people could go outside the N.C.C. Greenbelt. In 1974 the Ministry backed registered snowmobile clubs interested in maintaining their own trails. Three clubs established 130 miles of trail utilizing road rights-of-way, hydro lines and private lands, the written consent of the

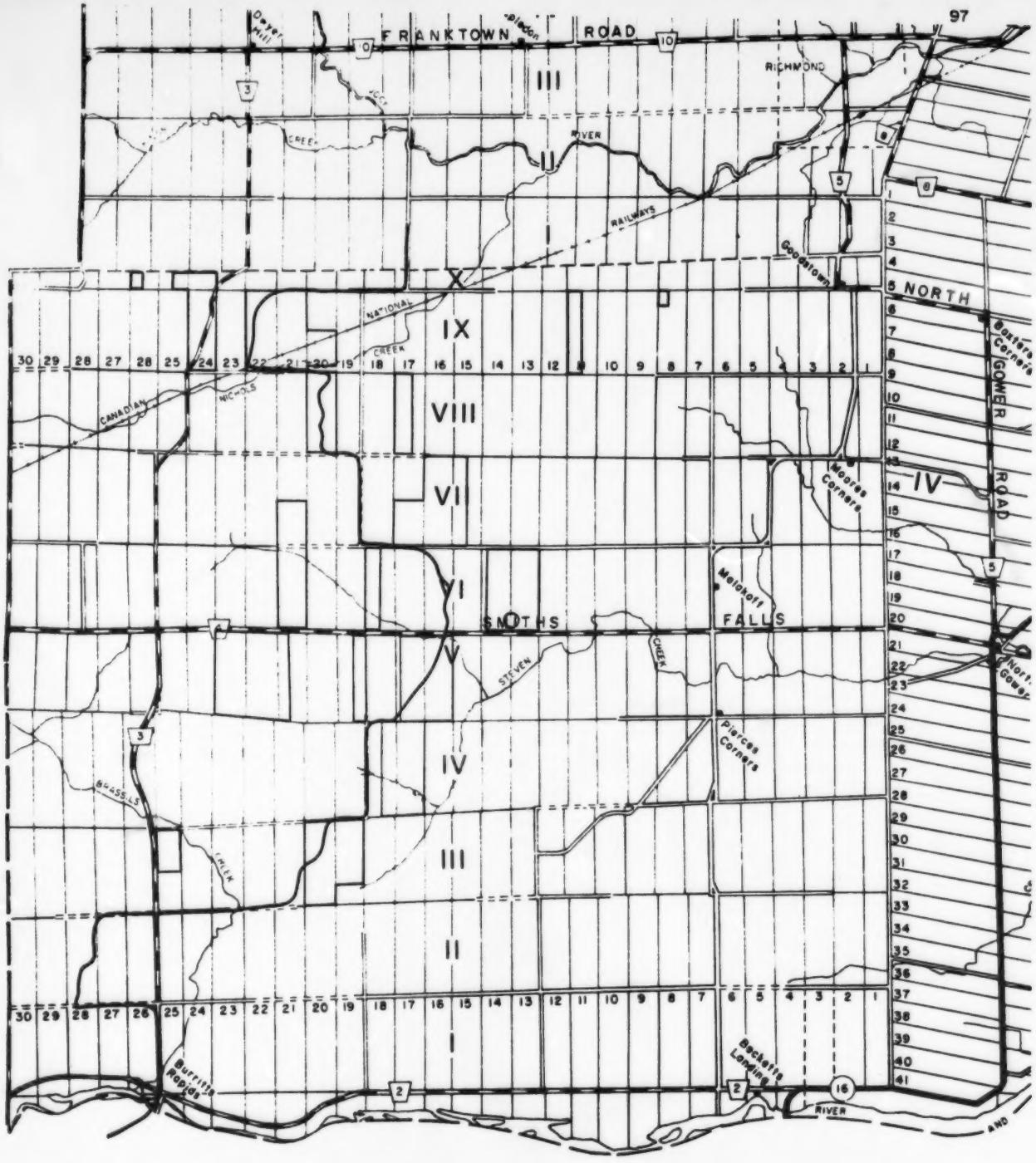


Ottawa-Carleton Forest
Forêt Regionale d'Ottawa-Carleton

12 miles of snowmobile trails .
LOCATION-Rideau Township, Regional Municipality of Ottawa-Carleton
FACILITIES-parking at the Cedar Grove picnic site on Regional Road 4, five miles west of North Gower.
TERRAIN-level fields and mixed forest. Trails include forest access roads and backroads.
INFORMATION-Ontario Ministry of Natural Resources
Box 434
R. R. 6, Ottawa
K1G 3N4
(613) 822-2525

12 milles de pistes motoneiges
LOCATION-Municipalité Rideau dans la Municipalité d'Ottawa-Carleton
FACILITES-parking au site de pique-nique Cedar Grove sur le chemin regional numéro 4, cinq milles à l'ouest de North Gower
TERRAIN-champs plat avec forêt mixte. Les pistes comprennent les chemins forestiers.
INFORMATION-Le Ministère des Ressources Naturelle de l'Ontario
Box 434
Ottawa
K1G 3N4
(613) 822-2525

Ontario
Ministry of Natural Resources



OTTAWA - CARLETON FOREST

RIDEAU TRAIL

CEDAR GROVE PICNIC GROUNDS

SCALE : 1 : 100,000

landowners was provided to obtain assistance. In addition to these trails the existing snowmobile trails in Ottawa-Carleton Forest were expanded to 25 miles. The Cedar Grove parking area was used for trailer drawn machines.

The Cedar Grove Picnic Grounds and the snowmobile trails were maintained by staff from Rideau Provincial Park.

Future recreation will provide for summer hiking and picnicking and winter cross-country skiing and snowmobiling. Since snowmobiling and cross-country skiing are not compatible on the same trail a separate system for each will be developed where possible. In general the forest roads will be used for snowmobiling, 25 miles, plus interconnecting links using where permissible, township road allowances and possibly private lands with the owner's consent. Deer wintering yards will be avoided.

An additional 14 miles of new hiking trail will be constructed to link the proposed picnic area with the existing trail system.

(i) Trails

Interpretive trails will be confined to areas of special interest. In particular the Cedar Grove Trail in Compartments 24 and 27.

Hiking trails will be the general rule. All trails will be indicated by suitable markers fastened to trees or posts so as to be visible from both directions. Where a trail

superimposes the Rideau Trail the Red Rideau Trail triangles and the other trail markers will be visible. A looped system will be the rule providing at least two distances from the same point of origin. Trails will originate from picnic areas. Trails will be indicated on a trail guide available at each picnic area.

All trails will be cut just wide enough for one person to walk unobstructed, and overhead branches cleared to permit passage on skis or snowshoes. All cutting will be done with approved methods.

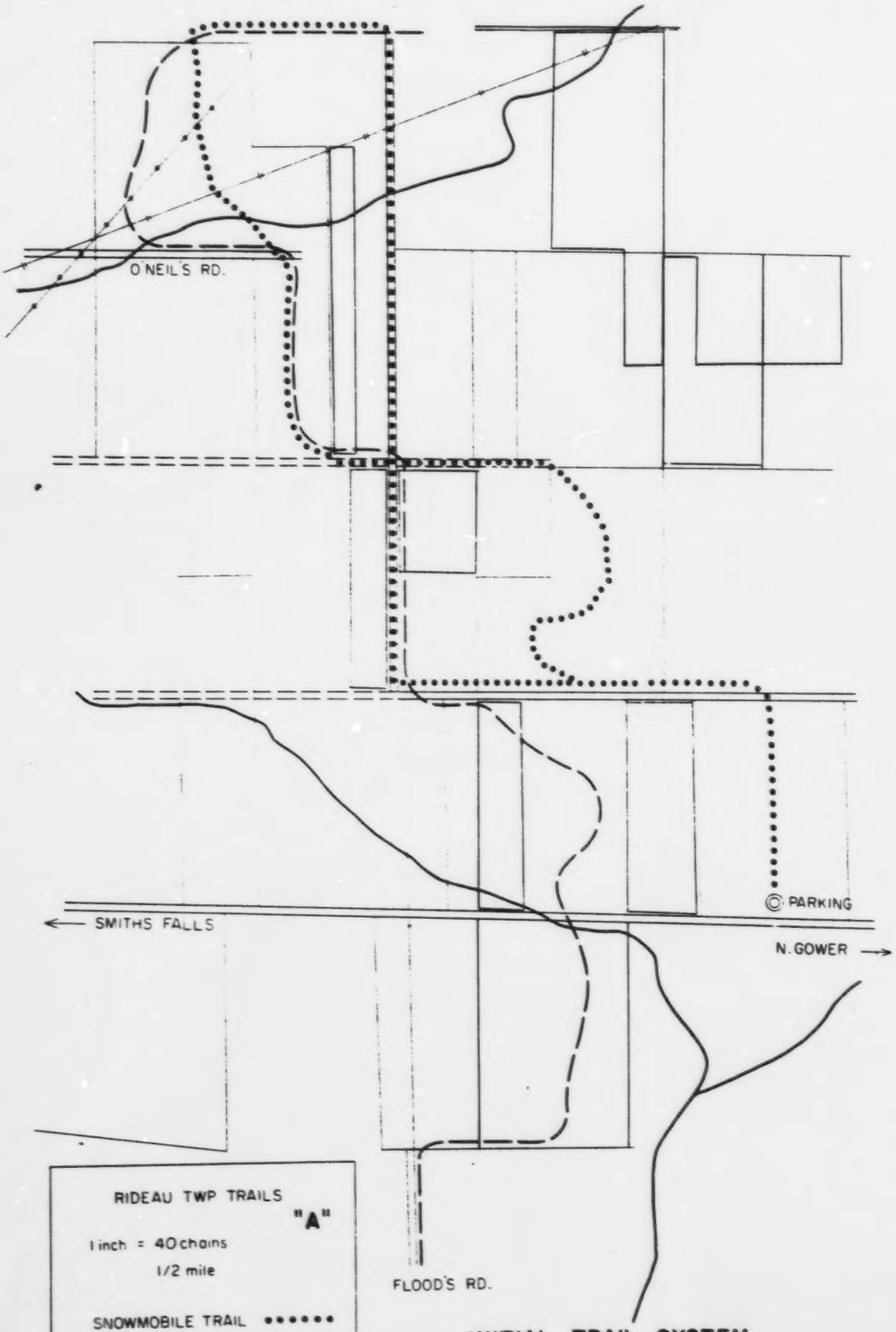
Bridges and walkways over wet areas will be constructed of local materials, debarked and treated with preservatives.

Rest shelters will be provided on the longer trails. Fires will be discouraged in the summer. Winter fires will be allowed in approved areas. (ie) rest shelters.

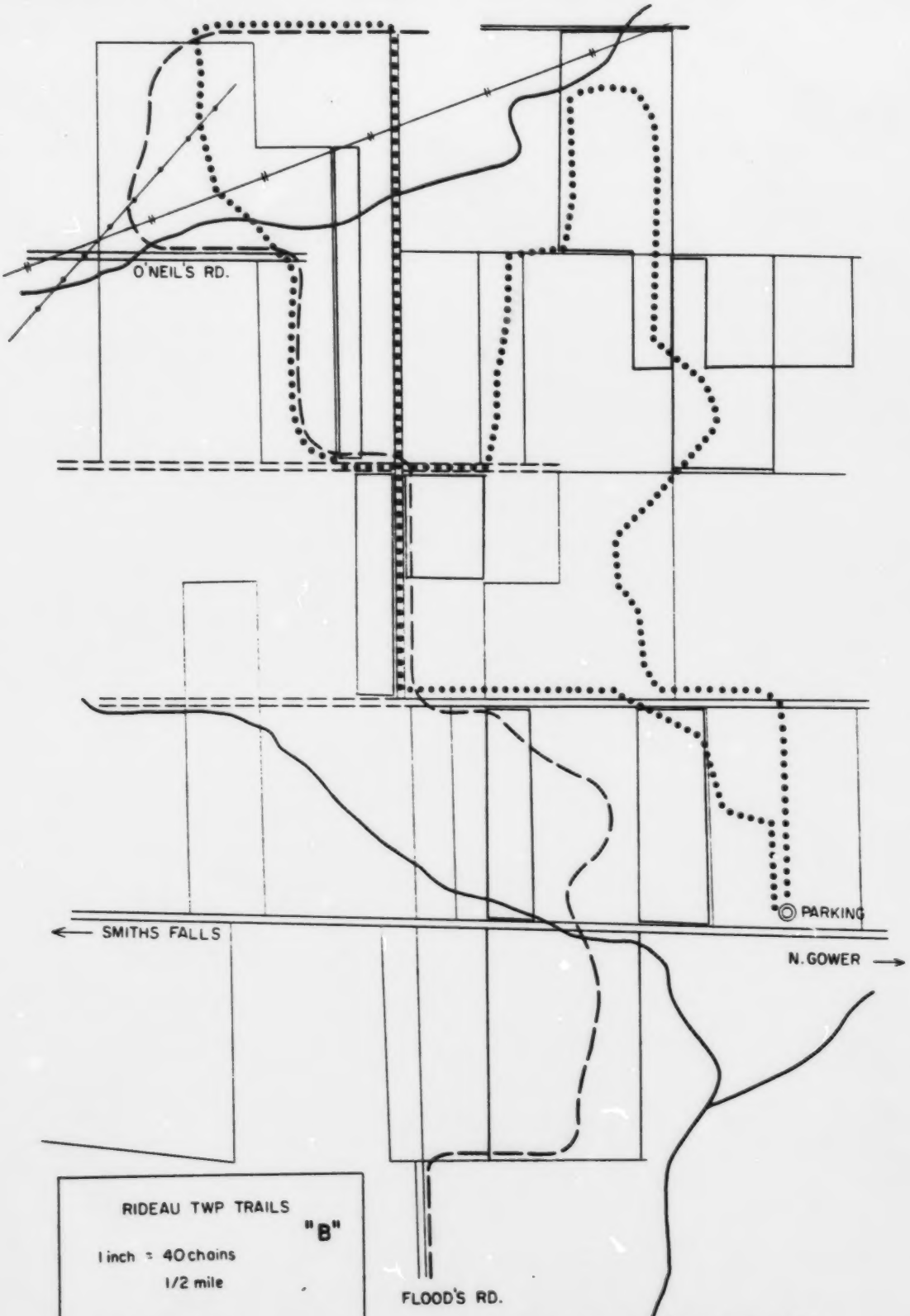
Four trails are listed in the following summary.

Trail System

Trail	Length	Location
Dwyer Hill Hiking Trail (2 loops)	4 miles 2 miles	Comp. 3,5,7,8,9
Cedar Grove Nature Trail	1½ miles	Comp. 24,27
Cedar Grove Hiking Trail	7 miles	Comp. 24,26,27,32, 31,16,17,18,19.
Rideau Trail	10 miles	Comp. 4,5,11,19, 26,27,36. plus private lands and roads.
Ottawa-Carleton Forest Snowmobile Trail	25 miles	Forest roads, road allowances.



INITIAL TRAIL SYSTEM



TRAIL SYSTEM TO BE IMPLEMENTED WHEN ADDITIONAL LANDS COME UNDER THE MANAGEMENT AGREEMENT.

WARNING-DANGER AHEAD

NO SNOWMOBILES

ASSURANCE MARKER

TRAIL DIRECTIONAL

COLOUR - BLACK ON REFLECTORIZED ORANGE

OTTAWA CARLETON FOREST
RIDEAU TOWNSHIP SNOWMOBILE TRAILS

Trail consists of approx. 25 miles of forest access roads & parts of the Rideau Hiking Trail.

Please obey all signs & trail markers to keep on the trail & thus avoiding any conflicts over tree plantations, bee hives & private land.

Legend:

P - Parking

T - Toilet

B - Bee hives (keep clear)

Nearest Medical Aid - Kemptville District Hospita

Gas & Service - North Gower

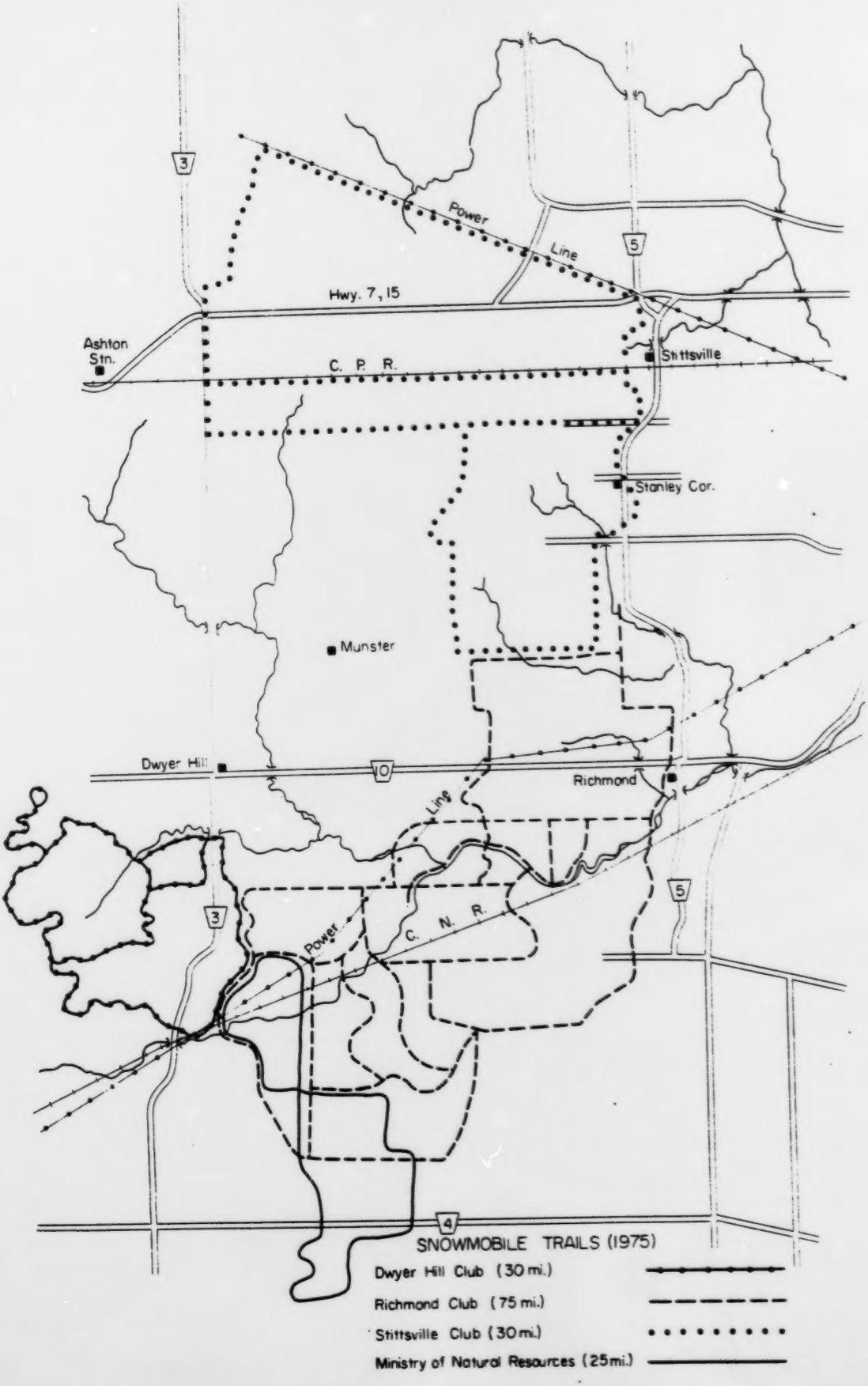
Note: Use caution at beaver areas marked with a caution sign. The water in these areas is not deep but it may be wet in mild weather.

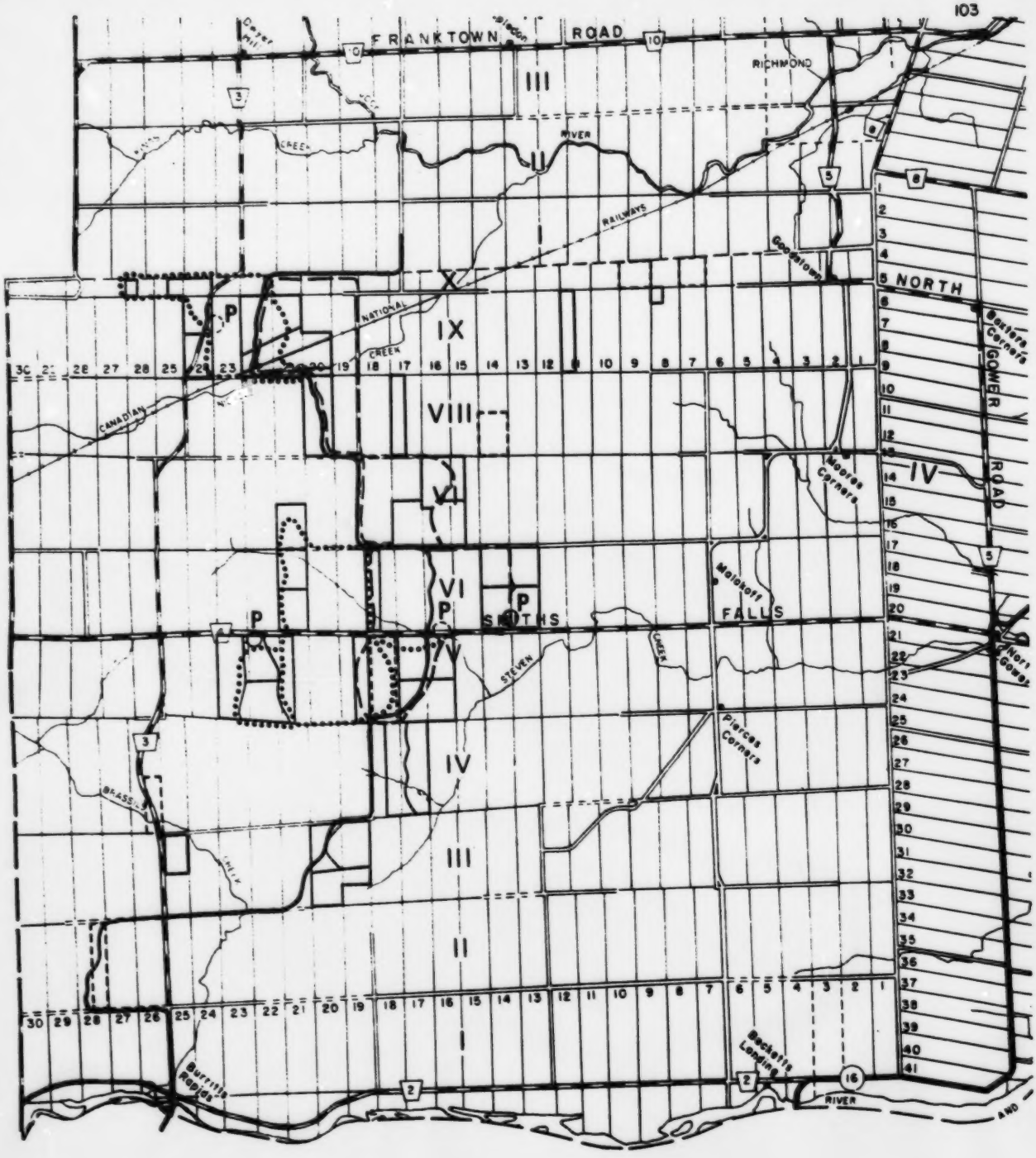
Ontario Ministry of Natural Resources

For information

Telephone

822-2525


3
Power
Line
5
Hwy. 7, 15
Ashton
Stn.
C. P. R.
Stittsville
Stanley Cor.
Munster
Dwyer Hill
10
Richmond
Line
3
Power
C. N. R.
5
4
SNOWMOBILE TRAILS (1975)
Dwyer Hill Club (30 mi.)
Richmond Club (75 mi.)
Stittsville Club (30 mi.)
Ministry of Natural Resources (25 mi.)



RECREATION FACILITIES

OTTAWA - CARLETON FOREST

CROWN LAND

EXISTING:

OP — PARKING AND PICNIC AREA

10 Mi. HIKING TRAIL

25 Mi. SNOWMOBILE TRAIL

PROPOSED:

OP — PARKING AND PICNIC AREA

15 Mi. HIKING TRAIL

SCALE : 1:100,000

Dwyer Hill Hiking Trail (proposed)

Beginning at the Dwyer Hill Picnic Grounds the trails' first loop, 2 miles, traverses a spectrum of forest types to pass a unique sedge meadow and pond adjacent to Comp. 9. An impressive white pine stand is in Comp. 9.

The second loop 4 miles follows an old road allowance on the Goulbourn-Marlborough Township line to join the Rideau Trail in Comp. 4. It returns via the Dwyer Hill Road and Comp. 8.

Cedar Grove Nature Trail (proposed)

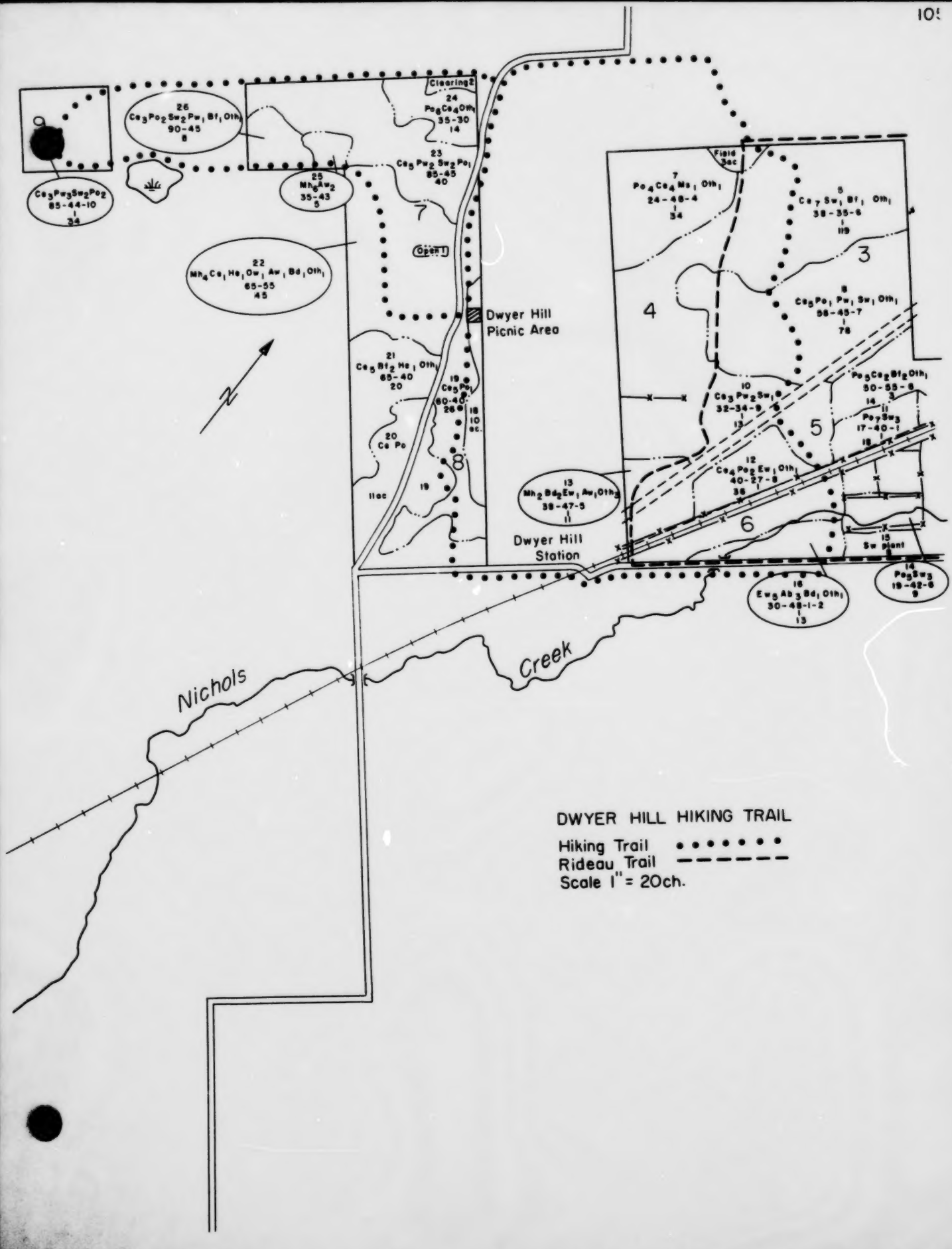
This $1\frac{1}{2}$ mile trail takes in two unique areas in Comp. 24 and 27. The Oxford-March rock outcrop at the picnic area and a permanent waterfowl area. An interpretive brochure will be published.

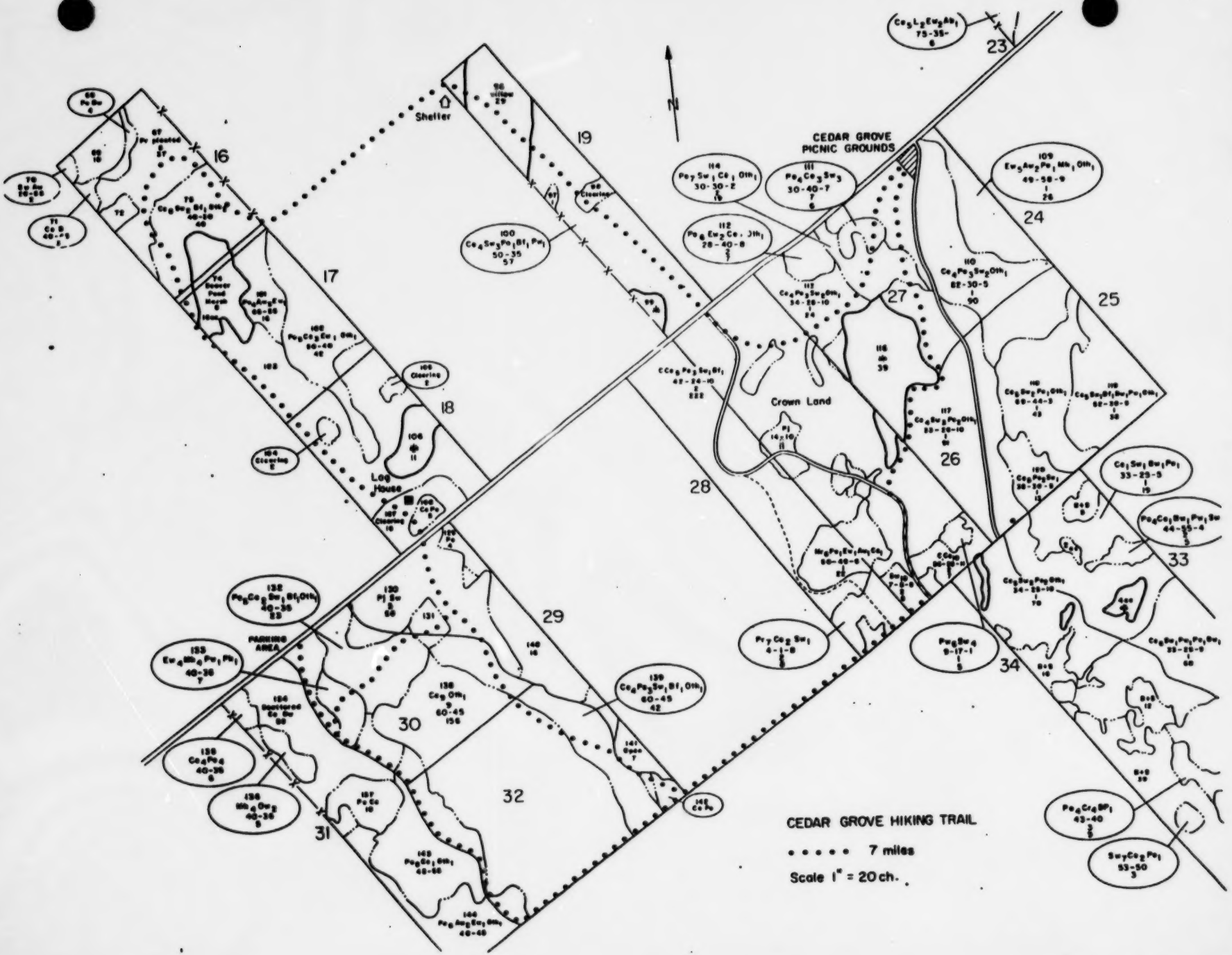
Cedar Grove Hiking Trail

This is the longest trail in the forest, 7 miles. This will necessitate the construction of a shelter in Comp. 31. An abandoned gravel pit on Regional Road 4 could be used as a supplementary parking area. An old pioneer log farm in Comp. 18 as well as waterfowl areas in Comp. 16, 17 and 19 add interest.

Rideau Trail

This is a linear trail extending 125 miles from Ottawa to Kingston. Ten miles of it passes through Rideau (Marlborough)


Clearing 2
Field 3ac
Open 1
Dwyer Hill Picnic Area
Dwyer Hill Station
Sw plant
Nichols Creek
DWYER HILL HIKING TRAIL
Hiking Trail
Rideau Trail
Scale 1" = 20ch.


N
Shelter
CEDAR GROVE
PICNIC GROUNDS
Crown Land
Log House
PARKING
AREA
16
17
18
19
23
24
25
26
27
28
29
30
31
32
33
34
CEDAR GROVE HIKING TRAIL
7 miles
Scale 1" = 20 ch.

OTTAWA - CARLETON FOREST

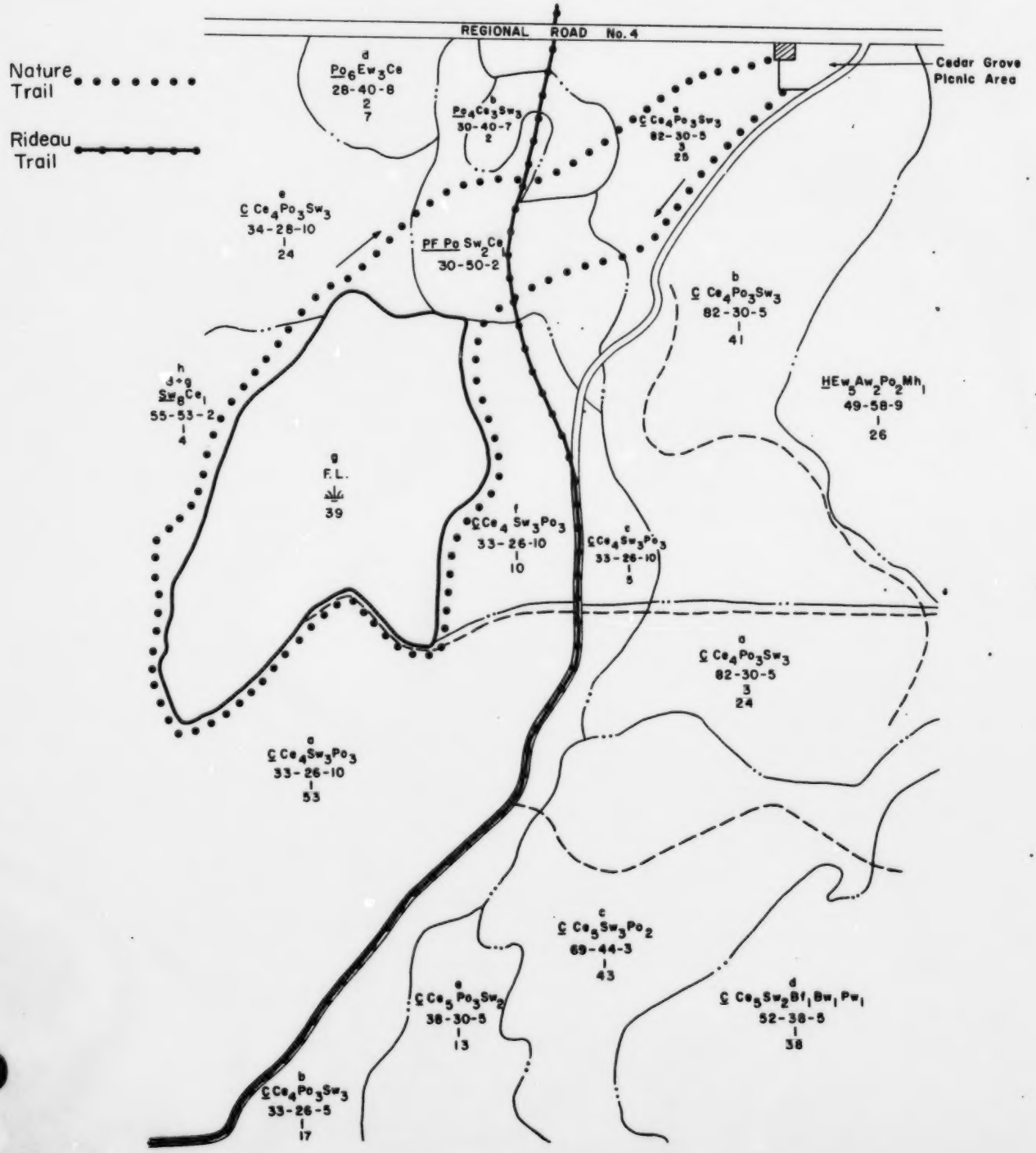
Comp. 27,26,25,24

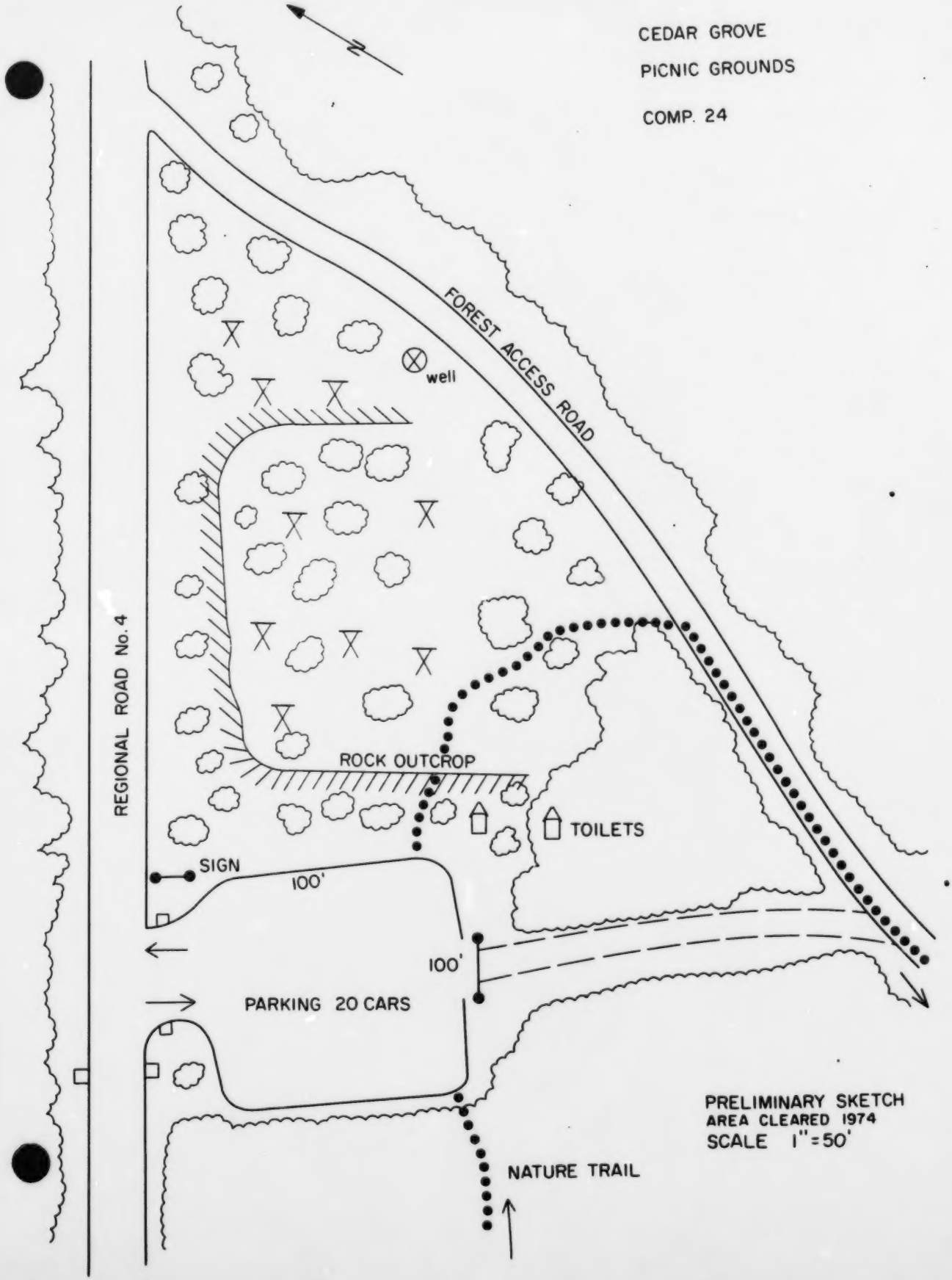
Pt N1/2 Lots 16,17, Con.V

Rideau Twsp , Marlborough Ward

Scale: 1" = 10 ch.

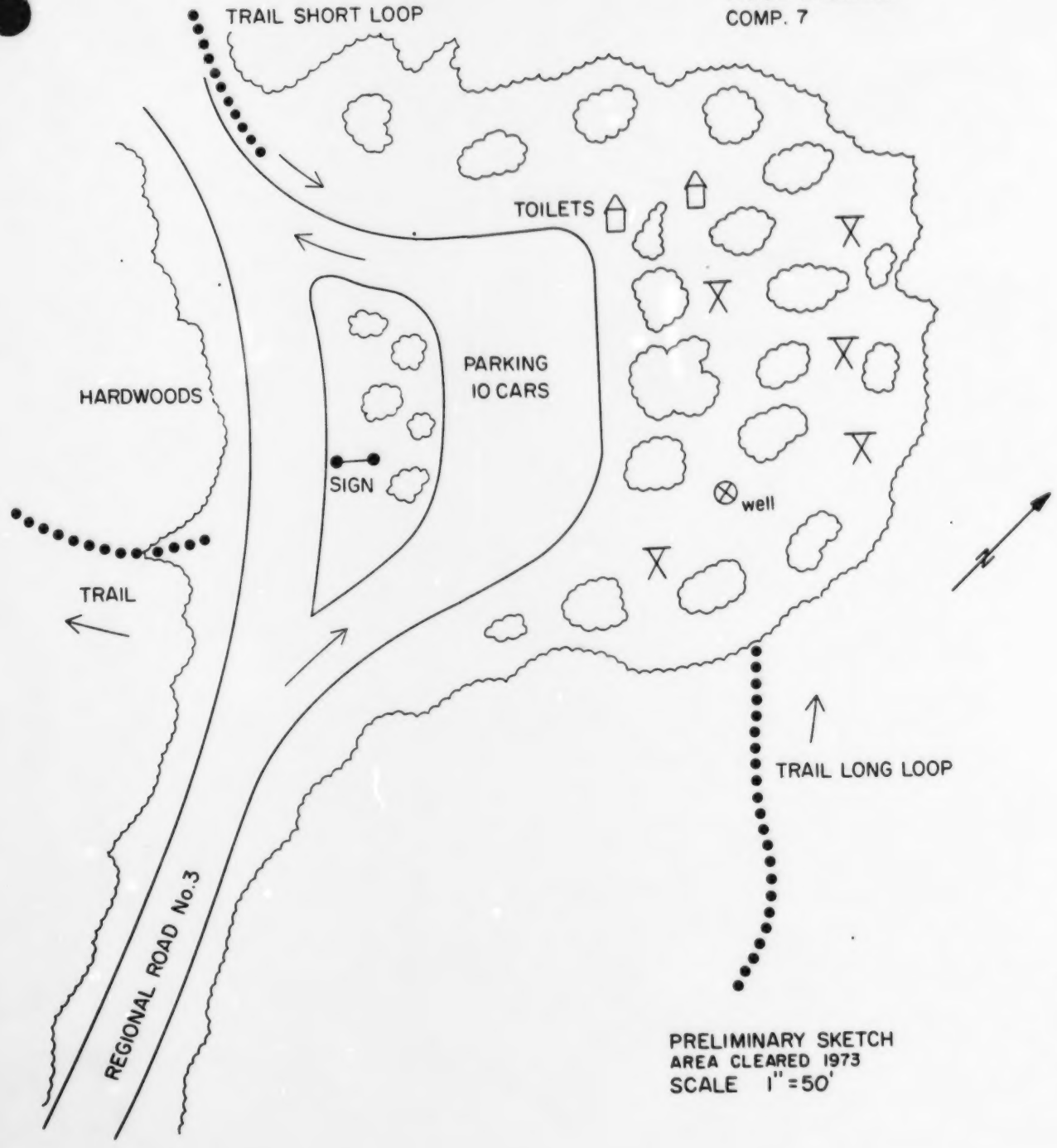
CEDAR GROVE
NATURE TRAIL


REGIONAL ROAD No. 4
Nature Trail
Rideau Trail
Cedar Grove Picnic Area
d Po6Ew3Ce 28-40-8 2 7
b Ps4Ce3Sw3 30-40-7 2
c C Ce4Po3Sw3 82-30-5 3 25
e C Ce4Po3Sw3 34-28-10 1 24
PF Po Sw2Ce 30-50-2
b C Ce4Po3Sw3 82-30-5 1 41
HEw5Aw2Po2Mh1 49-58-9 1 26
h 3+g Sw8Ce1 55-53-2 1 4
g F.L. 39
f C Ce4 Sw3Po3 33-26-10 1 10
c C Ce4 Sw3Po3 33-26-10 1 5
a C Ce4Po3Sw3 82-30-5 3 24
a C Ce4Sw3Po3 33-26-10 1 53
c C Ce5Sw3Po2 69-44-3 1 43
e C Ce5 Po3Sw2 38-30-5 1 13
d C Ce5Sw2Bf1Bw1Pw1 52-38-5 1 38
b C Ce4Po3Sw3 33-26-5 1 17


CEDAR GROVE
PICNIC GROUNDS
COMP. 24
N
FOREST ACCESS ROAD
well
REGIONAL ROAD No. 4
ROCK OUTCROP
TOILETS
SIGN
100'
100'
PARKING 20 CARS
NATURE TRAIL
PRELIMINARY SKETCH
AREA CLEARED 1974
SCALE 1"=50'

DWYER HILL

PICNIC GROUNDS
COMP. 7



PRELIMINARY SKETCH
AREA CLEARED 1973
SCALE 1" = 50'

Township. A detailed description appears in Appendix 10.

Ottawa-Carleton Snowmobile Trail

This trail will begin at the old Cedar Grove parking area on Regional road 4, Comp. 22. It will follow existing and proposed forest access roads and road allowances where permissible. These are relatively wide and level and permit safer travel.

Snowmobiles will be discouraged from using the narrow, rougher and more twisting hiking trails. These will be used by cross-country skiers and snowshoers.

(ii) Picnic Grounds

Two major picnic grounds are proposed. Cedar Grove (new location) on Regional road 4, Comp. 24 and Dwyer Hill on Regional road 3, Comp. 7. These will be the starting points for the Dwyer Hill Hiking Trail, the Cedar Grove Hiking Trail and the Cedar Grove Nature Trail.

The following facilities will be provided: Parking lot, picnic tables, approved toilets, garbage containers, and picnic site signs.

(iii) Special Projects

Groups or individuals interested in environmental research will be given permission to use the forest provided their activities are compatable.

A copy of all published reports must be turned over to the Ministry.

(iv) Camping

Camping will not be permitted on the forest. Special permission may be granted such groups as boy scouts to use designated areas for short periods.

(v) Hunting

Hunting will be permitted on the forest.

Forest management techniques are modified to encourage increased populations of waterfowl, ruffed grouse, deer and small mammals; Section 8 (f) Wildlife Management.

A large tract of land such as Ottawa-Carleton Forest should be open for the recreational activity of hunting.

In Summary

All these aspects of the plan are to be kept under review during the ten year period, and that provision for additional recreational educational and research uses be added as opportunity offers and needs become apparent.

11 CONSOLIDATION OF THE AREA

The mutual objective of the Regional Municipality of Ottawa-Carleton and the Ministry is to consolidate areas into large blocks where possible. New areas will be given a compartment number and inventory and operating records will be kept in a subsidiary ledger. At the beginning of the operating period April 1, 1985 - March 31, 1995, an operating plan for the total area will be prepared and if necessary the forest inventory will be brought up to date.

12 MAINTENANCE OF PLAN

The management plan report has been written for a 20 year period commencing April 1, 1975.

The operating plan for the first decade April 1, 1975 to March 31, 1985 is contained in the forest ledgers now in use.

The operating plan for the second decade will be prepared in 1984 and it will be based on a new forest inventory if necessary. If conditions and circumstance have changed greatly by 1984 then it may be necessary to revise the management plan report.

To show progress and costs and to facilitate future management planning, records will be kept in the forest ledger of completed operations of all kinds. It will be necessary to record production, revenues, improvements and cost in sufficient detail to give a complete but simple and accurate picture of forest management progress and costs.

Copies of operational maps (Scale 1" = 10 chains) will be kept on file to show for each decade the basic planned and completed operations such as cutting, establishment, tending, forest division, road construction, picnic sites and trails.

As additional forest properties are acquired, they will be mapped, inventoried and planned. The inventory and planning data will be entered in the forest ledgers.

A "Management Unit Memo Book" will be kept to assemble information which may be useful for the revision of the management plan. Annual reports and annual financial statements to the owners will be included in the "Memo Book".

Annual operating plans covering the next years' operations will be presented to the Municipality in February preceding the fiscal year's activities, along with the past year's annual report.

A five year amendment will be compiled indicating properties, work done and revised recommendations.

13 FOREST INVENTORY

The forest inventory was carried out by Ottawa District staff in 1972, 1973, and 1974 using standard procedures of the Forest Inventory Unit of the Silviculture Section.

Compartment numbers were assigned and sub-compartments were designated by letter. The data was entered in the forest ledgers as follows:

A. Area Classification - Form TM203, Part 1

B. Stand Description - Form TM203, Part 2

A set of maps was prepared at a scale of 1 inch = 10 chains and 1" = 20 chains.